DOCUMENT RESUME

ED 301 250 JC 880 545

AUTHOR Rosen, Mark I.; And Others
TITLE Educational Institutions and New Business Development: The Case of Madison, Wisconsin. Wisconsin Economy Studies Monograph #22.
INSTITUTION Wisconsin Univ., Madison. School of Business.
SPONS AGENCY Madison Area Technical Coll., Wis.; Wisconsin Univ., Madison. Graduate School.
PUB DATE Dec 87
NOTE 91p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Business; *College Role; Community Services; Community Surveys; *Economic Climate; *Economic Development; Influences; Job Training; Postsecondary Education; *School Business Relationship; Technical Institutes; Two Year Colleges; Universities

ABSTRACT

The study described in this report was conducted to determine the influence of the University of Wisconsin, Madison (UWM), and Madison Area Technical College (MATC) on businesses' decisions to locate in Dane County, and whether businesses use the services of the two schools. Chapter 1 presents an overview of the relationship betweeen higher education and business development. Chapter 2 presents survey findings on the reasons new firms chose to locate in Dane County. Responses from the 324 firms showed that they considered a multiplicity of factors, with personal reasons, markets, and the UWM as the most salient. Chapters 3 and 4 review the roles played by MATC and UWM to support business development, provide research, counseling, and continuing education resources for businesses, and interact with new businesses. In addition, these chapters discuss the ways in which the colleges were perceived by new businesses. Finally, Chapter 5 summarizes study findings and offers recommendations to further local economic development by capitalizing on the community's higher education assets. Appendixes include an economic profile of Dane County and the survey instruments. (AJL)

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Wisconsin Economy Studies Monograph #22

EDUCATIONAL INSTITUTIONS AND NEW BUSINESS DEVELOPMENT: THE CASE OF MADISON, WISCONSIN

by

Mark I. Rosen, William A. Strang,
Daryush Nowrasteh and Maria Papas Heide

December, 1987

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PREFACE

The research presented in this monograph is part of a broader study involving the economic impact of the University of Wisconsin-Madison (UW-Madison) and Madison Area Technical College (MATC) on the local economy. Two previous publications, Employment and Training Expectations of Employers In Area, Vocational, Technical and Adult Education District 4 and The University of Wisconsin-Madison and The Local and State Economies: A Second Look, dealt with dollar expenditures of students, employees, and visitors to the two institutions. This monograph looks at a less direct but equally important impact - how do the two institutions affect businesses' decisions to locate in the area? Are the UW-Madison and MATC significant factors in these decisions? Further, after firms have located in the area, do they utilize the services of MATC and UW-Madison?

At the time of this writing, a semiconductor consortium, SEMATECH, is evaluating sites for a major research facility that could eventually employ 800 people in Madison. The presence of the UW-Madison is one of the key reasons why Madison is being evaluated as one of a limited number of national sites. However, every week, other less glamorous businesses begin operations in Dane County. The role of MATC and the UW-Madison in these decisions is not well understood. Adding to a better understanding of that role is the function of this report.

Chapter 1 presents an overview of the relationship of higher education to business development. Chapter 2 presents survey findings as to why new firms chose to locate in Dane County. Chapters 3 and 4 specifically review the roles of MATC and UW-Madison and their interactions with these businesses. Chapter 5 summarizes the findings and offers some recommendations to further economic development in the local economy by capitalizing on the community's higher education assets.

ACKNOWLEDGEMENTS

This study was funded with grants from the Madison Area Technical College (MATC) and from the University of Wisconsin-Madison Graduate School. Dr. Norman Mitby, District Director of MATC, and Dr. Robert M. Bock, Dean of the UW Graduate School, are to be thanked for their financial support of the project.

Mr. Gerald Snow, at the Wisconsin Department of Industry, Labor and Human Relations provided us with a list of new businesses established in Dane County during a specific period prior to the study.

As in most studies based on survey data, however, the authors owe their deepest gratitude to the 324 business people who took their valuable time to respond to the study. Their cooperation has added to the understanding of how higher education and the business community interact in Dane County.

William A. Strang

CHAPTER 1

HIGHER EDUCATION AND NEW BUSINESS DEVELOPMENT

Introduction

Business is the lifeblood of any community, be it a rural Wisconsin town with its dairy farms or a thriving metropolitan area with every enterprise imaginable. Communities prosper to the extent that their businesses prosper, but the prosperity of any business is always uncertain -- even though many businesses do grow in employment and profits, others don't. To enhance overall economic growth, and to offset business attrition, all communities continually seek to attract and foster new business. Some pursue new firms actively, while others engage in more modest efforts.

It is probably safe to say that every new business starts driven by the enthusiasm and hope of its entrepreneurial founders. New businesses can be compared to children. When a business is born there are accompanying feelings of elation, anticipation, and worry over how to pay the bills. And like children, businesses grow in an unpredictable fashion, they relocate, they mature, and they often change direction.

This report is about the birth and early childhood of businesses in Madison, Wisconsin. Specifically, we focus on the "parental" role of Madison's two major educational institutions, the University of Wisconsin-Madison and Madison Area Technical College, and their relationships with local entrepreneurs. Our intent is to examine the part these two educational institutions play in attracting and supporting new businesses. The report's content is supplemented by the responses to a survey mailed to Madison area businesses that were started between 1980 and 1984.

Rather than targeting a particular industry or type of business, such as manufacturing or high-tech, we consider all industries and types of businesses

in the area. The assumption is that a new business such as a fast-food restaurant or a dental practice, while smaller and less spectacular than a genetic engineering firm or robotics facility, still contributes to the prosperity of the local economy.

There are many important factors besides educational institutions that contribute to new business start-ups. In Chapter 2 of this study we examine why firms chose the Madison area as their place of birth; in other words, we describe the factors that make Madison an attractive place to start a new business. Chapter 3 discusses the role played by Madison Area Technical College, and Chapter 4 the role of the University of Wisconsin-Madison. In Chapter 5 we attempt to draw some conclusions and make recommendations for enhancing these relationships between business and higher education, and fostering economic development.

In the rest of this chapter, we cover two areas. First, we discuss business-higher education relationships in the abstract, as background for the more concrete descriptions provided in Chapters 3 and 4. Then we briefly describe how our survey data was collected, and characterize the firms that responded.[1]

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[1]For the reader unfamiliar with Madison, we provide some basic economic information about the area in Appendix A.

Relationships Between Business and Higher Education[2]

Society is comprised of institutions, and each has its mission. Stated simply, business provides goods and services to society with the primary aims of creating employment and wealth, while institutions of higher education provide knowledge to society with the primary aims of enriching individuals' personal lives, making them more effective in their societal roles, and improving the world they inhabit. Despite fundamental differences in mission, it is obvious that the two have many mutual interests, and that the motivations for interaction are numerous. This section will discuss the nature of interchanges between business and higher education, considering new business development as only one small part of the picture.

We choose to focus on the larger picture based on the premise that it is limiting to try to isolate the ways that institutions of higher education influence new business development, while neglecting other types of business/education linkages. Rather, we maintain that start-ups inspired by the presence of educational institutions occur because of the multiplicity of services that such institutions offer the business community, and because of the diversity of individuals and talent that are attracted to communities with strong

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[2]This section is a synthesis of the following sources: Battenburg, J. R. Forging links between industry and the academic world. **SRA Journal**, Winter 1980, pages 5-11; Gold, G. G. (Ed.) **Business and higher education: Toward new alliances.** New Directions for Experiential Learning Series, Number 13, 1981. San Francisco: Jossey-Bass Inc.; Matthews, J. B. and R. Norgaard. **Managing the partnership between higher education and industry.** Boulder: National Center for Higher Education Management Systems, 1984; Melchiori, G. S. Research on university-industry linkages: The state of the art. AIR 1984 Annual Forum Paper (ED 246 794); Prager, D. J. and G. S. Omenn. Research, innovation, and university-industry linkages. **Science**, 207, 1980, pages 379-384; Stankiewicz, R. **Academics and entrepreneurs: Developing university-industry relations.** New York: St. Martin's Press Inc., 1986; **University-Industry research relationships: Myths, realities, and potentials.** Washington, D.C.: National Science Foundation, 1982; **University-Industry research relationships: Selected studies.** Washington, D.C.: National Science Foundation, 1982.

institutions of higher education. There are many different types of firms, many ways that educational institutions can be an asset to these firms, and thus many avenues for mutual benefit. Exploring the range of potential relationships would seem to be the most useful way to answer the question of how universities and community colleges are related to start-ups.

What brings business and higher education together? Each can benefit in a number of ways from cooperation. Some of the motivations for the business community are:

(1) Obtaining a window on the latest scientific discoveries in order to strengthen the firm's competitive position, both domestically and internationally. Research universities in particular are usually at the cutting edge in such fields as engineering and biotechnology. Gaining access to this research is often a necessity for firms in these high-tech industries.

(2) Institutions of higher education are a source of employees. Firms may initiate and maintain a relationship in order to place themselves in a better position to attract top graduates in critical fields. To quote Milton Eisenhower, the former president of Johns Hopkins University: "Higher education and business are basically interdependent. One needs money to produce educated people, and the other needs educated people to produce money."

(3) A company's image may be enhanced through association with an institution of higher education.

(4) Firms sometimes need access to certain specialized equipment and instruments possessed by an educational institution.

(5) Alternately, firms may be unfamiliar with recent changes in technological processes and may seek the assistance of educational institutions in order to stay up-to-date.

(6) A firm may encounter a specific problem that is outside of its area of expertise, and may contact a faculty member or department for help in solving it.

(7) By collaborating with educational institutions, firms can increase the depth and breadth of their research and development efforts.

(8) Firms may wish to have faculty or students test and evaluate experimental materials or products.

(9) Through involvement with educational institutions, firms are exposed to new ideas, concepts, and methods, stimulating employees to try new approaches, and potentially improving productivity.

(10) Some projects can be done less expensively by students, who gain from real-world learning experiences.

(11) Many firms work with educational institutions simply for good community relations and to be good corporate contributors to society.

Some of the reasons that educational institutions may seek out business and industry include:

(1) Employment of graduates.

(2) Access to instruments and equipment that are not yet available at the educational institution or too expensive to purchase. If facilities are obsolete, faculty research and student training suffer.

(3) Exposure to business and industry gives students an opportunity to learn about the real-world that is not available in the classroom. It also increases faculty awareness of the needs and resources of industry. In both respects, the educational institution's curriculum is enhanced.

(4) Firms can provide adjunct faculty with specific expertise.

(5) Firms can provide scientists and technicians who can serve in an advisory capacity or collaborate on research.

(6) Managers and employees represent the target population for many continuing education programs.

(7) Business and industry are a potential source of funding. Such funding is often less subject to the bureaucratic restrictions that accompany government funds.

(8) Corporate allies can give institutions of higher education political power, since top executives can be major voices in the setting of public policy.

(9) When higher education is involved with business, it enhances the public's perception that the local community is being served.

Given that each side has significant reasons for interacting with the other, what obstacles exist to inhibit interaction?

While it is certainly possible to generate a long list, we believe that the fundamental obstacles are value differences, negative stereotyping, and ignorance of potential benefits. Some business people, with their short-term profit orientation, see universities as ivory towers that pay little attention to real-world problems and too much attention to abstract, impractical theory. Some faculty at institutions of higher education, stemming from their long-term mission to develop and disseminate knowledge, see business as secretive, narrow, motivated solely by profit, and presenting problems that are for the most part intellectually uninteresting.

It would certainly be appropriate to insert a platitude at this point that optimistically states these differences of perspective aren't pervasive or important, but that wouldn't be true -- they are. The differences are real, valid, and likely to remain largely unchanged. The two parties should have different orientations because they each have different missions to society.

To transcend the differences it is necessary for both parties to take a broader view, to consider how collaboration can benefit business, higher education, and society as a whole. Research on business/higher education interaction suggests that goal similarity and compatibility are key factors in the amount and success of interaction.[3] Whenever the two sides take the time to communicate and recognize that they can more effectively achieve their goals by collaborating, avenues for interaction will be sought out and will take form.

There are as many different types of collaboration across the U.S. as there are interactions -- the forms that business/higher education relationships take can be compared to snowflakes, since no two are identical. Nonetheless, three basic patterns exist, and within these basic patterns, there are standard arrangements tailored to the unique needs of the parties.

The three basic patterns are: interactions involving teaching and learning services, technical interactions and university/industry research relationships, and mechanisms for assisting students in the transition from education to work.

Relationships centered around teaching/learning services take many forms. A partial list includes college-coordinated apprenticeships, cooperative education programs, tuition assistance for employees, joint curriculum improvement efforts, small business development courses and management development workshops. In these types of relationships, the community college often plays a major role because of its flexibility in tailoring education to the needs of local business, because of its specialized, technical offerings, and because

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[3]Tornatzky, L. G. **The process of technological innovation: Reviewing the literature.** Washington, D.C.: National Science Foundation, 1983.

the community usually has a greater voice in what courses are taught and what programs are offered.

Table 1-1 presents a comprehensive list of variations on the second category of relationships, technical interactions and university/industry research, taken from a National Science Foundation study of interactions at 95 major universities. Within this category four sub-groupings can be identified. General research support represents the donation of funds and equipment to higher education to advance research efforts. Cooperative research represents interactions that require cooperative technical planning to develop new ideas, products, or processes. Knowledge transfer involves the dissemination of information about new ideas, products, and processes, while technology transfer involves the development of programs to expedite their commercialization.

The third basic type of relationship, interactions to facilitate the transition from education to work, has some overlap with teaching/learning services. For example, internships and co-op programs serve a dual purpose -- they offer students a valuable learning experience, while simultaneously allowing the employer and the prospective employee to get acquainted. Other forms of this relationship include career fairs and on-campus recruiting. This is a fundamental form of interaction, since the business community is continually trying to identify and attract talented graduates of higher education programs, and higher education wants its graduates to become employed.

Another way of categorizing business/higher education relationships is in terms of the degree of interaction. At one end of the continuum are "distant" interactions, in which the parties have high autonomy and limited obligations. Contributions and purchases represent relationships of this type. At the other end of the continuum are "intimate" interactions, in which the parties have greater commitments and obligations to each other. Collaborative research would be an example.

Table 1-1

A Typology of Research Interactions

General Research Support

- Institutional Gifts in Support of Research
  - Monetary gifts
  - Equipment donation
  - Industrial contributions for research facilities
- Endowment Funds and Annuity and Trust Funds
  - Construction of research facilities
  - Industrially endowed chairs in a technical unit of a university

Cooperative Research

- Institutional Agreements
  - Industry funded contract research: Specific to a research program or project
  - Industry funded equipment transfers and loans and/or construction of research facilities
  - Industry funded research: Grants to a professor
  - Industry funded research: Graduate fellowship support
  - Government funded university/industry cooperative research: Grants and contracts
- Group or Consortial Arrangements Fostering Cooperative University/Industry Research
  - Special purpose industrial affiliate programs
  - Research consortia
- Institutional Facilities
  - Cooperative research centers
  - University-based institutes serving industrial needs
  - Jointly owned or operated facilities and equipment
- Informal Cooperative Interaction: Co-authoring Papers, Equipment Sharing, Information Sharing, etc.

Source: Peters, L. and Fusfeld, H. Current U.S. University-Industry Research Connections. In **University-Industry Research Relationships: Selected Studies.** Washington, D.C.: National Science Foundation, 1982, pages 67-107.

Table 1-1 continued

Knowledge Transfer

- Personal Interactions
  - Personnel exchange
  - Mechanisms for stimulating personal interactions: Equipment lending, advisory boards, seminars, speakers' programs, publication exchange
  - Adjunct professorships
  - Consulting
- Institutional Programs
  - Institutional consulting
  - General industrial associates programs
- University/Industry Research Cooperation and Education
  - Universities serve as the source of new science and engineering graduates for industry: Fellowships, internships, university/industry cooperative training programs
  - Doctoral graduates of science and engineering curricula initiate university/industry research cooperation
  - Continuing education is utilized to initiate and reinforce research collaboration: Short courses, personal contacts
  - Industry provides funds for graduate fellowships
- Collective Industrial Actions in Support of University Research Programs
  - Trade associations
  - Affiliates of trade associations
  - Independent research and R&D organizations affiliated with a university
  - Industrial research consortia

Technology Transfer

- Product Development and Modification Programs
  - Extension services
  - Innovation centers
- University and/or Industry Associated Institutions and Activities Serving as Interface and/or Foundation for University/Industry Research Interactions
  - Technology brokering and licensing activities
  - University connected research institutes
  - Industrial parks
  - Spin-off companies and university/industry research

It should not be surprising that relationships usually begin informally. Contacts through faculty consulting, continuing education programs, corporate philanthropy, graduate student internships, or alumni may later lead to formal relationships. More often than not, higher education takes the initiative rather than industry. It is not uncommon for a university president to initiate contact in order to set the tone for the entire institution.

The following quote describes the amorphous way in which interactions get started:

> ...the process of establishing university-industry interactions is not linear; it is circular, iterative, and sometimes discontinuous. It is not a mere mechanical matching of needs and capabilities followed by a definition of objectives and a working plan and schedule. It is, more importantly, an exercise in mutuality where understanding is more important than contracting, where personal contacts outweigh administrative mechanisms; and where ostensible purposes shelter undefined, and even more valuable priorities.[4]

There are a number of elements that contribute to the success and degree of interactions. One is the presence of matching mechanisms. If a business wants information, is it easy to discover which faculty member or department possesses it? Does the educational institution publicize the availability of its expertise?

Another is the attitude of individuals at the top -- both in business and in the educational institution. Is there a pre-existing history of trust, communication, and prior collaboration, and is interaction encouraged, or do the parties generally view each other through the wrong end of a telescope?

A third element is the degree of "customizing." Are programs for interaction imitations of successes elsewhere, or do they take into account the unique needs of the parties?

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[4]University-Industry research relationships: Myths, realities, and potentials, page 23.

Still another is compatible time perspectives. Do the parties share time horizons, or, as is often the case, does business want to see quick, marketable results at the expense of long-range research and development? One study identified this as the single most significant barrier to interaction.[5]

Finally, the parties must respect each others' policy frameworks. For example, there is a direct conflict between industry's desire for patent rights and a university's mandate to publish. The two parties must agree beforehand on how such issues are to be handled.

Out of necessity, this section has dealt briefly with a subject that deserves far more thorough discussion. The interested reader is encouraged to consult the references cited.

Business/Higher Education Linkages and New Business Development

Since the preceding section did not address the core of this report, business start-ups, we would like to briefly discuss it in the context of the points just covered. Very simply, we assert that all of the various types of business/higher education relationships discussed above contribute to new business development. This occurs because new businesses enter a pre-existing business/higher education climate, which has become established over time. In our survey of new businesses, which will be introduced in the next section, we found that of all the sources of information about the community that new firms could utilize in making a location decision, the one that was used the most was talking to other firms (see Table 2-1). There was little direct contact with the UW-Madison or MATC. In other words, our data suggests that entrepreneurs learn about the Madison business climate primarily from businesses that are

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[5]Fowler, D. R. University-industry research relationships. **Research Management**, January-February 1984, pages 35-41.

already established. Presumably, part of the information they receive includes opinions about the UW-Madison and MATC. The UW-Madison and MATC can thus foster new business development indirectly by strengthening linkages with the existing business community, and continuing to communicate their readiness to assist. This theme will be reiterated throughout this report.

New Businesses in the Madison Area: A Survey

Our survey was conceived with two objectives: to determine if Madison's educational institutions were influential in attracting new businesses, and to learn about relationships among new businesses, the UW-Madison and MATC. Instead of selecting a sample of new businesses, we sent surveys to all new businesses in Dane County (where Madison is situated) that started between 1980 and 1984. Lists of businesses were obtained from the unemployment records of the State of Wisconsin Department of Industry, Labor, and Human Resources (DILHR), since all new employers are required by law to register. This source was selected because sources of this type have been found to yield the most comprehensive and accurate lists.[6]

The survey, along with an introductory letter signed by the Mayor of Madison, the County Executive, and the President of the Chamber of Commerce, was mailed in the summer of 1984 to the new business addresses along with a business reply envelope. Respondents were assured of confidentiality, and were not asked to provide their names or the names of their firms on returned surveys. A week after the initial mailing all businesses received a postcard encouraging them to reply if they hadn't already done so.[7]

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[6]Birley, S. Finding the new firm. Paper presented at the Forty-Fourth Annual Meeting of the Academy of Management, Boston, 1984.

[7]See Appendix B for a copy of the survey and letter.

A total of 324 usable responses were received out of the 1534 that were mailed, yielding a response rate of 21%. We believe this figure understates the real response rate, since the list we used undoubtedly contained duplications and included businesses which were not actually new but changed name or ownership during the 1980-84 period. Unless all of these businesses responded, which would indicate to us that they were ineligible, the denominator of the proportion used to calculate the response rate is inflated.[8]

The survey was developed by the authors after an extensive literature review of business/higher education relationships and industrial location theory. To minimize potential bias, care was taken to disguise our objective of learning how important the UW-Madison and MATC were in the businesses' location decisions.

Table 1-2 lists the number of responding firms in each industry. Retailing had the highest number of responses, followed by business services.

[8]It was therefore not possible to determine how many businesses on the mailing list were not new businesses.

Table 1-2

Responding Firms By Industry

Industry[a]	Number	Percentage
Retail	86	26%
Business Services	49	15%
Miscellaneous Services	36	11%
Financial	29	9%
Medical/Health Care	27	8%
Construction	25	8%
Manufacturing	25	8%
Technical Services	15	5%
Wholesale	12	4%
Agriculture	7	2%
Transportation/Communication	7	2%
Not Provided	6	2%
TOTAL	324	100%

[a]Firms were grouped into industries by SIC codes.

Table 1-3 indicates the titles of the individuals in the new businesses who responded to the survey.

Table 1-3

Titles of Respondents to the Survey

Title	Number	Percentage
Owner	164	51%
President	69	21%
Chief Executive Officer	29	9%
Vice President	23	7%
General Manager	26	8%
Not Provided	13	4%
TOTAL	324	100%

Table 1-4 describes the nature of respondents' facilities.

Table 1-4

Type of Facility of Respondents

Category	Number	Percentage
Entire Company	211	65%
Retail Establishment	57	18%
Corporate Headquarters	18	6%
Major Office	16	5%
Branch	8	2%
Not Provided	8	2%
Manufacturing Plant	2	1%
Warehouse	4	1%
	324	100%

Table 1-5 describes the number of employees in responding firms. Over half of the firms had four or less employees.

Table 1-5

Number of Employees in Responding Firms

Number of Employees	Number	Percentage
1	39	12%
2	39	12%
3	53	16%
4	35	11%
5	26	8%
6	29	9%
7-10	41	13%
11-20	34	10%
21-50	19	6%
Over 50	7	2%
Not Provided	2	1%
	324	100%

Table 1-6 indicates the percentage of firms' budgets devoted to research and development. Just over half spend no money on R & D, while 8 firms spent more than 50%.

Table 1-6

Percentage of Budget
Spent on Research and Development

R&D Percentage	Number	Percentage
0%	153	47%
1-4%	50	15%
5-10%	75	23%
11-49%	18	6%
Over 50%	8	3%
Not Provided	20	6%
	324	100%

To summarize, the majority of new firms were small, owner-managed retailing and service businesses. In the following chapter, we describe why new firms chose Madison.

CHAPTER 2

WHY FIRMS CHOSE MADISON AND DANE COUNTY

As indicated in the previous chapter, the main intent of this report is to describe the relationships that exist between new businesses in the Madison area and its two major educational institutions. Nonetheless, in the course of obtaining this information, we were also able to learn what new firms found desirable about Madison, and why they chose to locate here. In this chapter the literature on industrial location is reviewed, and the survey findings with respect to location decision factors are described.

Industrial Location Decisions

The concept of industrial location often conjures up newspaper or television inspired images of major corporations carefully deliberating over several possible sites for a new plant while being wooed by eager community boosters. This scenario, while genuine, is relatively rare, its frequency inflated in most individuals' minds by the attendant hoopla. In fact, only a small percentage of new employment growth in a community is due to plant relocations of this type.[1] Most new employment results from either expansion of existing firms or new start-ups.

Accordingly, if one is to come to a real-world understanding of industrial location decisions, it is necessary to recognize from the outset that most new firms in a community have not gone through a deliberate process of considering and weighing numerous location factors, which is what one might expect, and what most economic models suggest. Instead, a majority of firms

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[1]Plantes, K. and S. Williamson. Industrial location: A review of the literature and implications for Wisconsin. Wisconsin Department of Development (no date of publication provided).

do not consider alternative locations at all.[2] Thus, the predominant model of industrial location, at least in terms of frequency, is that of the solo entrepreneur who starts a new firm in his or her local community and creates new jobs. Scant attention is paid to site selection since the entrepreneur begins the new firm in the community where he or she already resides.

Even when multiple alternatives are considered, the choice process is often less than systematic. Decision makers may lack sufficient information about alternatives because obtaining it may be too costly, or simply because of inertia. Personal considerations may enter the picture as well, turning a business decision that should be "rational" into one that is influenced by non-rational elements.[3]

So despite the prevalence of research on industrial location decision factors, the research has limited scope, and the location factors described by research are probably only considered by a minority of new firms. A possibility acknowledged by few studies is that lists of location decision factors obtained from many firms may simply reflect post hoc rationalization rather than a priori deliberation.

With these cautions in mind, it will still be useful to review the findings of location decision studies. For the most part, such studies tend to agree that the two main factors that firms consider when choosing a site are

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[2]Oster, S. Industrial search for new locations: An empirical analysis. **The Review of Economics and Statistics**, 161, 1979, 288-292.

[3]Eisinger, P. Business location factors. Report prepared for the Governor's Strategic Development Commission, State of Wisconsin, 1985.

markets and labor.[4] Firms, first and foremost, locate near their markets in order to maintain customer relationships. And labor is an important consideration since for most firms, especially labor-intensive ones, wages and salaries are the largest cost of doing business. Also, firms cannot succeed in producing goods or services unless appropriately skilled human resources are available.

Certainly, many additional factors are taken into account. Some studies identify climate as important;[5] others, access to raw materials and availability of transportation.[6] For large scale manufacturing, energy costs and availability are critical.[7]

Quality of life factors are often discussed. One article in a national news magazine suggested that employers in the 1980's are shifting to smaller cities with more relaxed lifestyles, lower cost of living, and less competition. Improvements in transportation and communication now make it feasible and even desirable to do business in smaller communities.[8] It is important to recognize, however, that quality of life will only be a consideration for a firm if the location meets other, more important criteria.

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[4]See, for example, Wheat, L. F. **Regional growth and industrial location.** Lexington, Massachusetts: Lexington Books, 1973; Kieschnick, M. Taxes and growth: Business incentives and economic development. In M. Barker (Ed.). State taxation policy. **Durham, North Carolina: Duke, pages 155-280; Morgan, W. E.** Taxes and the location of industry. **Boulder: University of Colorado Press, 1967.**

[5]**Wheat, Regional growth and industrial location.**

[6]Jacobs, J. Corporate subsidies from the fifty states. **Business and Society Review**, 33, 1980, pages 47-50.

[7]Brune, W. C. New criteria for evaluating electric energy service. **Industrial Development**, November-December 1980, pages 18-19.

[8]Davidson, J., L. Lanier and S. Peterson. Why many firms return to smaller cities. **U.S. News and World Report**, April 2, 1984, pages 76-77.

Existing research makes it fairly clear that tax incentive programs are not particularly important, despite widespread beliefs to the contrary.[9] According to Eisinger, the main value of such programs is that they send business a signal that local or state government is friendly, and interested in development.

Overall, the relative weight each factor has for a particular firm depends on the type of industry. Labor-intensive industries will, of course, emphasize labor availability. Manufacturing will require energy, access to transportation and raw materials. Service providers will seek a community with a sufficiently large market for their particular service.

One particular industry, high tech, has a fairly consistent set of requirements across firms. Because the success of such firms depends on highly-educated technical personnel, the availability of skilled labor, the presence of a major university, a lower cost of living, and close proximity of recreational facilities seem to be major factors that communities can capitalize on to attract high-tech firms.[10]

Historically, universities and other educational institutions have not played a particularly important role in business location decisions. With the ascendance of high-tech firms, their role may be increasing in importance. In fact, a consultant for the nation's major industrial location consulting firm,

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[9] Morgan, **Taxes and the location of industry**; Wasylenko, M. The location of firms: The role of taxes and fiscal incentives. In R. Bahl (Ed.). **Urban government finance**. Beverly Hills: Sage, 1981, pages 155-190.

[10] More elbowroom for the electronics industry. **Business Week**, March 10, 1980, pages 94-100.

Fantus Corporation, has said that educational opportunities are emerging as the key location factor of the 1980's.[11]

Chapter 1 discussed several reasons why this might be the case. First, educational institutions are a ready source of highly skilled labor which high-tech firms require. Second, they offer convenient continuing education opportunities to business. Third, faculty are a unique resource for technical expertise. Fourth, educational facilities may be of use to high-tech firms. And fifth, the overall quality of life generated by a major educational institution creates an attractive living environment for the employees of high-tech firms, who have in many cases spent several years living in similar environments while acquiring higher degrees.

This logic can be applied to a certain extent, not only to high-tech firms, but also to many other types of businesses. In Chapters 3 and 4 of this study we show just how new firms of all industries viewed Dane County's educational institutions. In the next section we discuss what factors new firms considered in their location decisions, based on the findings of our survey.

Reasons Given by New Firms for Locating in Dane County

In Chapter 1, Table 1-2, we pointed out that the respondents to our survey represent a broad cross-section of industries, and that manufacturing is not dominant. This industrial mix influences our findings. The overall importance of various factors is at least partially related to the types of firm responding, since different industries emphasize different factors. But before dis-

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[11]Ady, R. Remarks delivered at a conference on Financing Economic Development, Chicago, February 1-2, 1985, cited in Eisinger, Business location factors.

cussing location decision factors, related background information about new firms' decisions will be presented.

Of the three hundred and twenty-four new firms that responded to our survey, only sixteen, or 5%, relocated to Dane County. The rest began here. Only fourteen percent of new firms considered other locations outside of Dane County in their decision. The rest, 86%, did not consider alternatives, a percentage identical to that found in previous research.[12]

Only twenty-seven percent of new firms contacted outside sources for information in order to make a more informed decision. Table 2-1 indicates which sources were used, and how frequently.

Table 2-1

Sources of Information Used by New Firms in Making Location Decisions

	Frequency[a]	Percentage[b]
No Outside Source Used	229	73%
Other Firms	28	9%
Miscellaneous Sources (Not Specified)	26	8%
Greater Madison Chamber of Commerce	21	7%
Consultants	21	7%
Miscellaneous State Agencies (Other than DOD)	12	4%
University of Wisconsin-Madison	10	3%
Wisconsin Department of Development (DOD)	9	3%
Miscellaneous Local Agencies	8	3%
U.S. Department of Commerce	6	2%
Madison Area Technical College	2	1%

[a]Based on 324 responding firms.

[b]Percentages do not sum to 100% because respondents were able to indicate more than one source.

The preceding data suggests that the majority of new firms in Dane County were started by local entrepreneurs who probably did not consider other loca-

[12]Oster, Industrial search for new locations.

tions. Firms that relocated or considered alternate sites are the exception. Table 2-2 lists in order of importance the reasons new firms gave for locating in Dane County. As mentioned earlier, it is probable that firm's responses reflect primarily post hoc rationalizations rather than a priori deliberation. Nevertheless, the information provided by the table is valuable, since it can be interpreted as a list of Dane County's strong points as seen through the eyes of new firms.

The two most significant individual reasons for locating in Dane County were personal ties to Dane County or Wisconsin and a general preference for Wisconsin or the Midwest. This is not surprising in view of our conclusion that most new firms are started by local entrepreneurs, who apparently like it here.

The next three reasons are all market-related, as the literature on location decisions would suggest. New firms were started by local entrepreneurs because of perceived market opportunities, either through proximity to distributors or customers, opportunities to enter new markets or existing markets, or perceptions of competitive opportunities.

The UW-Madison was listed next, a relatively high ranking. New firms clearly saw the UW-Madison as a major asset.[13] Somewhat surprisingly, labor did not show up strongly. On the survey, respondents were able to consider seven different labor-related reasons for locating in the Madison area. Despite this, labor was only mentioned a total of 79 times (among the seven) as being one of the five most critical reasons. In contrast, market issues were mentioned a total of 286 times, even though respondents only considered

[13]See Chapters 4 and 5 for detailed discussions of the UW-Madison's role in attracting new business.

Table 2-2

Reasons for New Firms' Decisions to Locate in Dane County

Reason	Rank[a]	Number of Firms Listing Reason as One of the Five Most Critical	Average Importance Rating[b]
Personal ties to Dane County/Wisconsin	1	183	3.83
General preference for Wisconsin/Midwest	2	100	3.49
Close proximity to markets (distributors or customers)	3	101	3.21
Opportunity to enter new market or serve an existing market	4	99	3.20
Competitive opportunity in local markets	5	86	3.14
Presence of the UW-Madison	6	61	2.66
Population size	7	57	3.05
Success of already established firms	8	53	2.66
Recreational and cultural opportunities	9	43	2.58
Availability of necessary labor skills	10	37	2.59
Cost and availability of business real estate	11	33	2.33
Presence of State of Wisconsin offices	12	29	2.12
Housing (selection, availability, cost)	13	23	2.47
General quality and productivity of the labor force	14	27	2.56
Proximity to major suppliers	15	21	2.20

Table 2-2 continued

Reason	Rank[a]	Number of Firms Listing Reason as One of the Five Most Critical	Average Importance Rating[b]
Scenic beauty	16	20	2.42
Access to major highway interchanges	17	23	2.08
Availability of financing or government financial incentives	18	13	1.79
Presence of Madison Area Technical College	19	16	2.12
Proximity to other facilities or headquarters of this firm	20	15	1.74
Air passenger service	21	10	1.64
Quality of primary and secondary schools	22	15	2.23
Medical services	23	11	2.23
Business regulations	24	11	2.17
Construction costs	25	8	1.87
Overall quality of trucking, railroad, air freight	26	11	1.88
Crime rate	27	9	2.25
Wage rates	28	8	2.13
Climate	29	6	1.93
Utility and energy costs	30	6	2.03
Business taxes	31	4	2.02
Costs of raw materials	32	3	1.73
Cost-of-living	33	5	2.27
Zoning	34	5	1.95

Table 2-2 continued

Reason	Rank[a]	Number of Firms Listing Reason as One of the Five Most Critical	Average Importance Rating[b]
Employer costs of contribution to workmen's compensation	35	3	1.96
Government services (public transportation, police fire)	36	3	2.24
Personal taxes (income and property)	37	3	2.18
Employer costs of contribution to unemployment insurance	38	2	1.96
Availability of funds for employment and training programs	39	1	1.64
Union climate	40	1	1.54
Site selection assistance from local government agencies	41	0	1.34

[a]Rank was determined as follows. Respondents were asked to list the five reasons which were the most critical in their location decision. All first place choices were assigned five points, second place four points, third place three points, fourth place two points, and fifth place one point. Ranking followed from the point totals calculated for each reason.

[b]Based on a five-point scale: 5 = Critically Important, 4 = Very Important, 3 = Important, 2 = Not Very Important, 1 = Not Important at All.

three different market-related reasons. Education was mentioned a total of 92 times out of three possible reasons listed.

In summary, firms considered a multiplicity of factors, with personal reasons, markets, and the UW-Madison as the most salient. In the next two chapters we discuss new firms' relationships with the UW-Madison and Madison Area Technical College.

CHAPTER 3

THE ROLE OF MADISON AREA TECHNICAL COLLEGE

Programs and Services to Support Business Development

As the pace of technology quickens and the face of business and government seem to change almost daily, many professionals and technicians confront an increasingly serious and complex challenge--how to maintain up-to-date capabilities in their work force when the work itself is changing rapidly in fundamental ways.

Wherever economic growth affects a business, pressure is created to recruit new employees quickly and effectively. At the same time, a different type of pressure is created by competitive forces which can make it difficult for a business to invest time and funds to train new hires as well as existing employees. Madison Area Technical College exists in part to help train skilled and semi-skilled human resources to meet these pressures.

Madison Area Technical College had its beginning in 1912. Since that time, the institution evolved from a city educational institution to a district serving the citizens of five counties (Columbia, Dane, Jefferson, Marquette, and Sauk) and portions of seven other counties.

At present MATC is serving 52,000 full- and part-time students in 85 post-secondary programs in seven campus locations. The staff providing instruction and instructional support services numbers over 1,800 in full- and part-time assignments.

According to data provided by the Department of Industry, Labor and Human Relations, there are over 12,000 business establishments (including local, state, and federal agencies) located in the communities served by MATC. Employers provide employment for over 230,000 individuals. The district work force is approximately 10 percent of the total work force in the State of

Wisconsin. Approximately 86 percent of business establishments in the district employ nineteen persons or less. The distribution of employment by county is shown in Table 3-1.

Table 3-1

Distribution of Employment
in MATC's District

County	Percent of District Work Force
Dane	75.3
Jefferson	11.4
Sauk	7.0
Columbia	5.4
Marquette	0.4
	99.7

The relative (adjusted) share of employment by major sectors is elaborated upon in Table 3-2.

Table 3-2

Share of Employment by Economic
Sector in MATC's District

Standard Industrial Classification (SIC)	Percent
Services and Miscellaneous	30
Wholesale and Retail	21
Public Administration (local, state, federal)	17
Finance, Insurance, Real Estate	7
Manufacturing	20
Others	5
	100%

The above information suggests that 75 percent of the district employers are small business establishments engaged in service-oriented sectors of the economy.

Programs and Services to Serve Business

Madison Area Technical College, in conformity with its mission, is responsible for the initiation, development, maintenance, and supervision of programs

with specific occupational orientations below the baccalaureate level, including terminal associate degrees, training of apprentices, and adult education below the professional level.

A. Madison Area Technical College offers the following set of programs to meet the needs of the business community:

1. Training skilled individuals for employment as they complete programs and enter the world of work for the first time.
2. Offering programs, courses, seminars, workshops on business locations, or on its five campus locations, the opportunities in retraining individuals who are in the work force and lack the necessary skills to assure upward mobility and realize higher productivity.
3. Providing individuals the opportunity to learn basic skills necessary for entering occupational programs--for individuals who are in the work force and lack sufficient remedial preparation to obtain jobs that pay above minimum wages.
4. Providing business and industry with programs, courses, seminars, and workshops designed to meet their specific needs.
5. Providing technical assistance to the business community as requested in such areas as problem solving, quality control, and testing.
6. Providing cultural programs and services designed to enrich the life of the community and citizens throughout the year.

MATC helps to create a pool of skilled labor that is highly productive, well-disciplined, and motivated. The objectives that MATC achieves include providing opportunities for youth and adults to enter the world of work and assisting in upgrading workers' skills while in the labor force. These activities improve the quality and productivity of labor.

The above offerings, as well as the activities described below, complement the wide range of programs and research activities of the University of Wisconsin-Madison to serve the business community. In addition to helping train the human resources needed for economic growth of the district, MATC is implementing plans to meet the challenge of the future.

The construction of the main district campus at Truax Airpark was complete and operational as of July 1986. A high technology simulation center is under construction, providing programs and services to business and industry to help solve production problems, train highly skilled workers, test new equipment and processes, conduct product testing, and carry out some applied research activities in an environment that is current with technological developments in high technology industries.

Completion of the Downtown Campus renovation and its operation by January of 1988 will enhance the ability of MATC to provide educational programs, technical assistance, customized training and other services to the Madison business community.

Since May of 1984, MATC has been researching the type of programs, workshops, courses, and technical assistance activities to be offered in the high tech facilities. A committee composed of leading employers in the District, including an Associate Dean from the UW-Madison School of Engineering, has recommended the following modular approach for programming at MATC's high technology facilities.

1. **Metrology:** This module would be geared toward non-destructive material examination and measurement including: photoelectronic sensing devices, sound systems, robotics vision systems, laser applications, electronics calibration process, and so forth. The opportunity would be provided for individuals from business and industry in the area to

observe various ideas in practice, which could then be applied on site, including machine and process equipment. This would also include the rapidly growing area of high technology equipment on assembly lines.

2. **Manufacturing, Industrial Software Systems:** This module would include computer driven applications and computer integrated manufacturing, Numeridex CNC programming systems, computer numerically controlled machine tools, flexible manufacturing, and robots. The module would also include a Computer Aided Design system utilized in civil technologies (public works), manufactured products, electrical, structural, printing, and graphic areas.
3. **Individual Skill Development Systems:** This module will include computer-based, audio visual/video taped special library materials for self-paced skill building, under supervision. Examples of areas would be: interviewing, computer security, public speaking, specific occupations, or personal skills.

The expected outcomes resulting from the establishment of the High Technology Simulation Laboratory are to accomplish the following:

1. Training the skilled labor needed by business and industry located in the District and/or companies that plan to locate in the District.
2. To function as a training center to update the skills of individuals employed in business and industry.
3. To serve as a center to test and conduct special product development and/or improvement (quality assurance).
4. To provide increased interaction among technical resource persons in business, industry, MATC and the University of Wisconsin-Madison.
5. To serve as a specialized center to relate all MATC programs.

6. To provide an environment for training high achieving individuals.
7. To help stabilize high skill employment, meet the needs of business and industry, and have a direct economic impact (income and productivity) in the community.

The Division of Alternative Learning is enhancing its offerings to meet the changing needs of business, industry, students, and general population, and to help cope with emerging technological developments. These offerings include:

1. Changing trends in traditions of college programming by use of flexible scheduling and non-traditional delivery systems dedicated to reaching new or underserved groups of the population.
2. Delivery of instruction through the use of various telecommunication technologies.
3. Weekend college programming.

The Associate in Applied Science Degree was developed to meet the needs of employers for trained supervisors. This program is offered on a five-year part-time schedule with classes in the late afternoons and evenings to accommodate the employed adult.

The key to the success of economic development efforts resides on the quality and productivity of our human resources and how well we are able to realize the potential of those resources to expand the economic base and to improve the quality of life and maximize economic well-being of the community.

The nature and variety of programs and services offered by Madison Area Technical College are intended to respond to changing conditions of the market for skilled and semi-skilled resources. The offering of the Biotechnology Laboratory Technician Program in the fall of 1987 was in response to the need expressed by the Madison business community. Industries that locate in the District have taken advantage of customized labor training programs, indicating what they expect MATC to do for each enterprise. In some cases (Inter-

pane Company), requests were made to recruit personnel. In other cases, teachers were requested to provide instruction in given areas (Temescal, Trek Bicycle, W. T. Rogers, etc.). Therefore, industry itself has a pronounced influence on how MATC can provide services to match their needs. In this sense, the role of MATC in location decisions is defined by business itself.

While the preceding description of MATC programs does not directly discuss specific programs developed by MATC to influence location decisions, it does provide indirect coverage of the concept by describing some of MATC's attractions for firms considering location in Dane County. In the following section specific perceptions of new businesses toward MATC are described and discussed.

New Business Perceptions of MATC

The purpose of this section is twofold. First, it describes the role played by MATC in decisions by firms to locate in Dane County. Second, it considers the various ways that new business firms interacted with MATC.[1]

Of the 41 possible location decision factors listed on the survey sent to new businesses in Dane County, the "Presence of Madison Area Technical College" ranked nineteenth.[2] Table 3-3 shows the distribution of firm responses. About one-third of the firms considered MATC to be important, very important, or critically important to their location decisions.

When the survey was designed, a number of questions were included to see if they might be related to perceptions of importance. Table 3-4 lists in order of magnitude the results of a statistical analysis which revealed how strongly responses to each question were related to perceived importance.

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[1]Data are from respondents to the survey described in Chapter 1.

[2]See Chapter 2 for a detailed discussion and ranking of the 41 location decision factors.

Table 3-3

MATC as a Location Decision Factor

Degree of Importance	Percentage of Respondents
Critically important	6%
Very important	10%
Important	20%
Not very important	21%
Not important at all	45%
	100%

Table 3-4

Question Responses Related to the Importance of MATC as a Location Decision Factor

Questions Listed in Order of Strength of Statistical Relationship[a]

1. Number of contacts with MATC faculty or administrators (3.34).
2. Percentage of firm employees currently enrolled at MATC (3.24).
3. Percentage of customers or clients that are MATC students or faculty (3.22).
4. Percentage of MATC graduates employed (3.24).
5. Proximity to MATC (from zip code).
6. Percentage of sales from MATC authorized purchases (3.23).

[a]Question numbers from the survey are in parentheses. The original survey can be found in Appendix B.

The question which had the strongest relationship to MATC's perceived importance as a location decision factor was the number of contacts with MATC faculty and administrators by new firms, indicating that firms which had contact with MATC representatives were more likely to consider MATC important in their location decision. Of course, these contacts probably took place after the location decision was made, which again suggests that the importance scale we used is probably a better indicator of current perceived importance than location decision importance.[3]

Responses to the next three questions which were statistically related to the importance measure were all contact variables as well: percentage of employees attending MATC, percentage of customers affiliated with MATC, and percentage of MATC alumni employed. Clearly, MATC was rated higher if the new firm had some type of personal contact with MATC students, faculty, or alumni.

Framing the responses to these questions in a somewhat different fashion yielded similar findings. The average importance rating across firms was higher for those firms that had contact with MATC students, alumni, or faculty. This is shown in Table 3-5.

Along similar lines, those new firms that felt that MATC was important in helping to meet their labor force needs gave higher importance ratings. This is illustrated in Table 3-6.

Firms that used MATC facilities or services were more likely to rate MATC higher in importance, as indicated in Table 3-7.

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[3]See Chapter 2 for further discussion of this point.

Table 3-5

Contacts with MATC Students, Alumni, or Faculty, and Location Decision Importance

Survey Question[a]	Average for Location Decision Importance[b] Yes	No
Firm has customers or clients that are MATC students or faculty (3.22)	2.1	1.6
Firm has employees attending MATC (3.24)	2.7	1.9
Firm has employees who are MATC alumni (3.24)	2.4	1.9
Firm had contact with MATC faculty or administrators (3.34)	2.7	1.9

[a]Question numbers from the survey are in parentheses.

[b]Numbers refer to a five-point scale in the survey where "5" indicates that MATC was critically important to the location decision and "1" that it was not important at all. All differences in average importance between yes and no responses are statistically significant at the .01 level.

Table 3-6

The Importance of MATC for Meeting New Firms' Labor Force Needs and Location Decision Importance

Importance of MATC for Meeting New Firms' Labor Force Needs	Average for Location Decision Importance[a]
Very important	3.0
Fairly important	2.3
Not very important	2.0
Not important at all	1.6

[a]Numbers refer to a five-point scale in the survey where "5" indicates that MATC was critically important to the location decision, and "1" that it was not important at all. The differences in average importance among responses are statistically significant at the .01 level.

Table 3-7

Use of MATC Facilities or Services
and Location Decision Importance

Survey Question	Average for Location Decision Importance: Yes	No
Firm contacted MATC instructors or departments for assistance or advice (3.13)	2.6[a]	1.9
Firm sponsored or subsidized employee attendance at MATC courses, seminars, or workshops (3.14)	2.5[b]	2.0
Firm used MATC library facilities (3.15)	2.5[a]	2.1
Firm used MATC technical facilities	2.8[a]	2.1

[a]Differences between yes and no responses statistically significant at the .05 level.

[b]Difference between yes and no response not statistically significant.

The data presented in Tables 3-3 to 3-7 appear to indicate that firms did not really consider MATC's importance as a location decision factor in responding to the survey, but rather their survey responses were more influenced by impressions formed since starting their business. Nonetheless, it seems apparent that contact with MATC in various guises influenced perceptions. This suggests that MATC should continue to cultivate relationships with employers through its various avenues.

MATC and Interactions with New Businesses

Once a business has been in operation for several years, patterns of interaction with educational institutions become established. In the case of MATC, these patterns manifest in several ways. Firms may hire MATC graduates on a regular basis; they may send employees to classes; they may consult

faculty who have technical expertise. However, in the case of newer firms, these relational patterns are still developing. Firms may not know the caliber of MATC courses, faculty, or graduates at first, or they may simply be unaware of what MATC offers altogether. To learn about the extent of relationships between MATC and new firms, Section 3 of the survey asked a series of questions about interactions between the two.

Not surprisingly, more than 80 percent of new firms thought MATC was important to Dane County's economy, as shown in Table 3-8.

Table 3-8

Importance of MATC to the Economy of Dane County

Very important	26%
Fairly important	59%
Not very important	10%
Not important at all	2%
Don't know	3%
	100%

Over 40 percent felt MATC was important in helping them to meet their firm's labor force needs.

Table 3-9

Importance of MATC in Helping Firms to Meet Their Labor Force Needs

Very important	13%
Fairly important	30%
Not very important	28%
Not important at all	26%
Don't know	3%
	100%

A series of questions on the survey asked firms specifically to indicate various ways they may have interacted with MATC. Results are shown in Table 3-10.

Table 3-10

The Extent of Various Types of Interactions Between New Firms and MATC

	Percentage of Respondents	
	Yes	No
Firm contacted MATC instructors or department for assistance or advice (3.13)[a,b]	28%	72%
Firm sponsored or subsidized employee attendance at MATC courses, conferences, seminars, or workshops (3.14)[c]	20%	80%
Firm used MATC library facilities (3.15)	6%	94%
Firm used MATC technical facilities (3.16)	6%	94%
Firm used other MATC facilities for firm-related functions (3.17)	3%	97%
Firm contributed funds to MATC (3.18)	2%	98%

[a]Numbers in parentheses refer to survey question numbers. See Appendix B.

[b]Departments contacted most frequently were: Business, Printing and Publishing, Data Processing, Job Placement, Hotel and Restaurant Management, Automotive and Art. A total of 48 different departments were contacted among respondents.

[c]Larger firms (20 employees or more) were more likely to respond with a yes (39% v. 20% for all respondents) indicating that over one-third sent employees to MATC courses.

Almost half of the firms had customers or clients that were student or faculty members at MATC. Table 3-11 provides a more detailed breakdown.

Table 3-11

Customers and Clients of New Businesses and MATC Affiliation

Percentage of Customers/Clients Who are MATC Students or Faculty	Percentage of Respondents[a]
0%	56%
1-10%	35%
11-20%	5%
More than 20%	4%
	100%

[a]Larger firms (20 employees or more) were more likely to provide a non-zero response (63 percent v. 44 percent for all respondents) indicating that almost two-thirds had customers or clients who were MATC students or faculty.

Few of the firms sold directly to MATC as an institution.

Table 3-12

New Business Sales to MATC

Percentage of Firm's Sales to MATC	Percentage of Respondents
0%	93%
1% or greater	7%
	100%

About 20 percent of the firms had employees who were presently attending MATC, as indicated in Table 3-13.

Table 3-13

New Businesses and Employment of MATC Students

Percentage of Firm's Employees Attending MATC	Percentage of Respondents[a]
0%	81%
1-10%	10%
11-20%	3%
More than 20%	6%
	100%

[a]Larger firms (20 employees or more) were far more likely to provide a non-zero response (74 percent v. 19 percent for all respondents), indicating that about three-fourths of the larger new firms employed MATC students.

Along similar lines, Table 3-14 shows the percentages for MATC alumni.

Table 3-14

New Businesses and Employment of MATC Alumni

Percentage of Firm's Employees that are MATC Graduates	Percentage of Respondents[a]
0%	72%
1-10%	7%
11-20%	4%
21-30%	5%
31-40%	4%
More than 40%	8%
	100%

[a]Larger firms (20 employees or more) were more likely to provide a non-zero response (55 percent v. 28 percent for all respondents) indicating that more than half employed MATC graduates.

In addition to firm-initiated contacts, questions were also asked on the survey about MATC-initiated contacts. Table 3-15 describes the percentages of new firms contacted by MATC via mail, phone, or personal visits regarding various MATC services.

Table 3-15

Percentages of Firms Contacted by MATC
Regarding MATC Services

Type of MATC Service	Percentages of Firms Contacted by MATC Regarding the Service: Contacted	Not Contacted
Credit course offerings	23%	77%
Non-credit adult education opportunities	23%	77%
Testing services	1%	99%
Business counseling	4%	96%
Placement of graduates	15%	85%
Student internships	11%	89%
Other student learning experiences	7%	93%

A final question asked new firms whether they had professional contact with an MATC faculty member or administrator during the past year. About 25 percent did have some type of contact.

Concluding Remarks

One of the points made in Chapter 1 was that entrepreneurs talk to fellow businesspeople about the local business climate when they are deciding where to start a business, and what business to start. MATC is thus likely to influence business location decisions indirectly through its extensive services to existing business and industry, which include technical and managerial programs, employee skill upgrading, retraining, and new career development programs. MATC may not be a particularly salient factor in the initial stages of a business start-up, but when new firms expand, they will need new employees and technical expertise. It is increasingly likely that as businesses grow they will look to MATC, recognizing that it offers a comprehensive array of services. It is at this point that MATC's contribution to the economic development of Madison and Dane County is fully realized.

CHAPTER 4

THE ROLE OF THE UNIVERSITY OF WISCONSIN-MADISON

Programs and Services to Support Business Development

Some of the most remarkable economic growth in the nation has occurred around centers of higher education. The most publicized university/industry relationship has been the research relationship, primarily involving the physical sciences. Dozens of universities have established or are attempting to establish research parks to attract industry to their area. The competition among universities to attract glamorous new firms is fierce, but the business development potential is great in an economy that is increasingly dependent on technology.

Most businesses, nonetheless, are not high technology businesses. University communities also are attractive to "low-tech" businesses, in some instances because of student and university employee markets and in others because of the advantages of having access to a ready supply of well-educated workers. Because university communities tend to offer interesting living environments, they also become attractive business locations because of quality of life factors. Finally, many graduates of universities build attachments to their alma maters and choose to remain in the local area, in many cases, by beginning their own enterprises.

The University of Wisconsin-Madison has several programs that are specifically designed to tie the university to the business community, the heaviest emphasis going to building research relationships. Some of the programs and activities are described below.

Research Ties to Business

A 1984 compendium of UW System resources available for business and industry indicated that there are 174 centers on the UW-Madison campus that offer services for industry. Most of these offer research or technical services, and it is clear that the list is incomplete (e.g., neither the Applied Population Laboratory nor the Biotechnology Center are included).[1] Here, rather than replicate the complete UW System study, it is appropriate to focus on a few of the major efforts to build the university research ties to the business community.

The first "aggressive" move to link business and the university was the establishment of Wisconsin for Research (WFR) in 1980. WFR is a private organization, with a Board of Directors staffed by both university and business people, whose purpose is to encourage cooperation between the UW-Madison and state industry. WFR has the specific intent of stimulating the establishment and/or relocation of research-oriented businesses in the local economy. It played an important role in the location of Agrigenetics in Middleton's Industrial Park.

As a means of facilitating new business development, WFR manages the Madison Business Incubator (MBI), which owns a multipurpose building created especially for entrepreneurs and their businesses. The MBI program offers low cost offices, work space, a wet lab, together with flexible lease terms, shared support services, and business advisory assistance. MBI, because of its WFR sponsorship provides access to the vast resources of UW-Madison.

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[1]Akhtar, J. (Ed.). **University resources for business and industry: U.W. System.** Madison: University-Industry Research Program, 1984.

Perhaps most importantly, WFR has a Seed Capital Fund for start-up investments. The fund's present capacity is $450,000, but plans for a major expansion are underway.

A second aggressive and ambitious undertaking to develop new research businesses in the local economy is the University Research Park. Using land previously dedicated to agricultural research on Madison's west side, the UW-Madison has developed a plan to recruit many research laboratories and businesses to locate together in a research park. The plan calls for a multi-tenant facility, many single tenant buildings, a major conference center hotel, supporting commercial entities, and an office park.

Construction of two buildings has been completed and several other prospective tenants are expected to make commitments soon. A joint venture partnership for a multi-tenant facility has been formed as well. The University Research Park program involves national marketing and the direct effort to bring new businesses to the Madison area.

As an example of this, the UW-Madison is presently working closely with city and state officials in an effort to attract SEMATECH to Madison and a location in the University Research Park.

The grandfather organization in the area of research ties to industry is the University-Industry Research program (UIR), which was founded in 1963. This long-term program began before research parks and the like were in vogue and it has provided a stable base for interaction between industry and the research establishment at UW-Madison for many years.

The principal function of the UIR program is to facilitate the transfer of new technology from the UW-Madison to industry. In promoting this transfer, UIR serves as a "window" to UW-Madison research. It helps industry to identify where university resources exist and it makes referrals, acting as an informa-

tion clearinghouse for the 8,000 research projects underway on the Madison campus (involving the expenditure of approximately $160 million annually).

Specific UIR programs include "Touchstone" seminars organized topically, or "company briefings" in which individual companies receive a broad spectrum of relevant reports on current research over several areas. UIR also publishes a magazine about the campus research activities and distributes the magazine widely to industry.

The UIR program supports the development of "industrial consortia" which consist of groups of companies that contribute financial support to streams of faculty research. Sponsors then share equally in the results of the research.

With close ties to the broad network of research activities on the campus, UIR is in a unique position to respond to inquiries from either existing or potential businesses. It also works informally, but actively with a group of "high tech" entrepreneurs in Dane County, who meet to share their experiences on a regular basis.

Counseling and Continuing Education Ties to Business

The primary formal counseling organization to link business to the Madison campus outside the research/technical arena is the Small Business Development Center (SBDC) in the School of Business. The SBDC's objective is to support and foster continuous entrepreneurship and innovation as the fulcrum to strong, steady, and significant economic growth. The SBDC focuses on the problems facing small business owners and managers. Small business is broadly defined to include some fairly large businesses, so the SBDC's potential impact is very substantial.

SBDC programs involve one-on-one counseling, product evaluation, product development and testing, business feasibility analysis, demonstrations of new technologies and processes, and access to extensive data banks and publications.

With most of the job growth in the state and nation coming from small and medium-sized businesses and the vast majority of these businesses being "low-tech" or "no-tech," the importance of the SBDC as an extension of the research-focused university activities is clear.

Less institutionalized counseling for business and industry takes place in many different departments on the campus. To cite just a few examples, the business school, working with the SBDC, is involved in a program called the Small Business Institute (SBI), which, through a credit course format, brings students into counseling roles for small businesses in the area. Such students may be enrolled in the SBI course, or in courses such as marketing research, information systems, real estate, or operations management.

Outside the business school, statistical consulting services are made available through the Statistics Laboratory, which provides assistance in experimental design and data analysis, including enhanced product development, product reliability, process improvement, and quality control. Another example comes from the university's very strong language programs which often provide translation services for businesses. And the list could go on and on.

A major attraction of business to a university community could also be the ready availability of formal continuing education programming. Management education is important in keeping employees current and businesses competitive.

Although the gamut of continuing education programs available from university sources in Madison is very broad, the two programs most relevant to this report involve business and engineering. Continuing education in these two program areas has recently involved mergers of Extension programs and UW-Madison programs.

In terms of continuing education for managers and executives, the business school now offers 300-400 different programs that will reach 12,000-13,000 man-

agers and executives in 1985-86. This includes the major programming efforts of the Management Institute. Additionally, the effort in continuing education for engineers will produce about 222 programs in 1985-86, reaching approximately 9,225 engineers and technical employees.

The inventorying of the services provided by the university to service and attract industry, or even a tabulation of the specific interactions arising from such activities may exaggerate the importance of the UW in the location decision. The other side of the university-industry relationship is industry itself. This survey of new businesses provides some direct indications from businesses themselves as to the role of the UW in their operation.

New Business Perceptions of the UW-Madison

In this section, two aspects of the relationships between the UW-Madison and new firms will be explored using the survey results. First, the role played by the UW-Madison in location decisions by new businesses will be described. Second, the scope and degree of interactions between the University and new firms will be presented.[2]

Out of the 41 possible location factors listed on the survey sent to new businesses in Dane County, the "presence of the UW-Madison" ranked sixth.[3] Table 4-1 shows the distribution of firm responses. Over one-half of all new firms surveyed considered the UW-Madison to be important, very important, or critically important in their decision to locate in Dane County.

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[2]Data are from respondents to the survey described in Chapter 1.

[3]See Chapter 2 for a detailed discussion and ranking of the 41 location decision factors.

Table 4-1

The UW-Madison as a Location Decision Factor

Degree of Importance of UW-Madison	Percentage of Respondents
Critically important	13%
Very important	20%
Important	21%
Not very important	14%
Not important at all	32%
	100%

In addition to rating each of the location decision factors, new firms were also asked to indicate specifically the five factors that were most critical in their location decision. A total of 61 new firms included the UW-Madison in the top five. Table 4-2 gives a more detailed breakdown.

Table 4-2

Number of Firms Indicating that the UW-Madison was One of the Five Most Important Reasons for Locating in Dane County

UW-Madison as a Reason for Locating in Dane County	Number of New Firms[a]
Most important	11
Second most important	16
Third most important	16
Fourth most important	9
Fifth most important	9
	61

[a]A total of 324 firms responded to the survey.

At the time the survey was designed, it was surmised that responses to certain questions might be related to perceptions of importance. Table 4-3 lists in order of magnitude of statistical relationship the results of a stepwise regression which revealed how strongly responses to each question were related to perceived importance.

Table 4-3

Question Responses Related to the Importance of the UW-Madison as a Location Decision Factor

Questions Listed in Order of Strength of Statistical Relationship

1. Number of contacts with UW-Madison faculty or administrators.
2. Proximity to the UW-Madison.
3. Percentage of UW-Madison alumni employed.
4. Percentage of firm's budget spent on research and development.
5. Percentage of UW-Madison students employed.

The question which had the strongest relationship to the UW-Madison's perceived importance as a location decision factor was the number of contacts with UW-Madison faculty and administrators. The more interactions firms had with UW-Madison representatives, the more likely they were to consider the UW-Madison as important in their location decision.[4]

The likelihood that contacts occurred after the location decision was made complicates the interpretation of this finding. On one hand, the reader might question whether the importance scale used in the survey really measured location decision importance; it could also reflect impressions formed since starting the business. On the other hand, it is equally possible that those firms which initially considered the UW-Madison when choosing a location subsequently contacted and worked with UW-Madison representatives after start-up. This would be in contrast to firms that did not consider the university initially and thus were less likely to have subsequent contact. Unfortunately, it is not possible to choose between explanations based on the data at hand, so we assume our measure of importance is a valid one.

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[4]One-third of all new firms had at least one contact.

The next variable which showed a statistical relationship to perceived location decision importance was proximity to the University. Using zip code as a basis for determining distance, firms in the immediate vicinity of the university were more likely to rate the university higher. However, since some high tech firms with close relationships to the university are located in outlying areas of Madison, we tend to believe that proximity may not be as significant as our analysis indicates.

The next set of question responses related to importance was the percentage of alumni employed by the firm. Firms with more alumni rated the University as more important. Again, in similar fashion to the contact variable, it is not clear whether firms with an a priori favorable mindset towards the University were more inclined to hire alumni once located in Dane County, or if contact with alumni influenced the importance rating.

Percentage of budget devoted to research and development was found to be related to perceived importance. We hypothesized firms that were more research-oriented would choose Dane County because of the University's presence, and the data appears to bear this out.

Finally, the percentage of currently enrolled UW-Madison students employed was related to importance. This statistical relationship can be interpreted in a parallel fashion to the alumni variable.

Analyzing the responses to survey questions in a different way yielded similar findings. Table 4-4 describes the results of an analysis looking at new firms' contacts with the UW-Madison.

Higher ratings of the UW-Madison as a location decision factor corresponded to a greater perceived importance of the University for meeting the labor force needs of new firms. This is shown in Table 4-5.

Table 4-4

Contacts with the UW-Madison and Location Decision Importance

Survey Question	Firm Had Contact			Firm Did Not Have Contact		
	Average[a] Importance Rating	Number of Firms	Percent of Firms	Average[a] Importance Rating	Number of Firms	Percent of Firms
Firm has customers or clients that are students or faculty at the UW-Madison[b]	3.0	173	62%	2.4	105	38%
Firm sells to the UW-Madison[b]	3.1	50	17%	2.6	246	83%
Firm has employees who attend the UW-Madison	3.1	87	30%	2.4	203	70%
Firm has employees that are UW-Madison alumni	3.0	124	42%	2.3	169	58%
Firm had professional contacts with UW-Madison faculty or administrators	3.4	86	34%	2.3	170	66%

[a]Numbers refer to a five-point scale in the survey where "5" indicates that the UW-Madison was critically important to the location decision and "1" that it was not important at all. All differences in average importance between yes and no responses are statistically significant at the .01 level.

[b]Includes UW-Extension

Table 4-5

The Importance of the UW-Madison for Meeting New Firms' Labor Force Needs and Location Decision Importance

Importance of the UW-Madison for Meeting New Firms' Labor Force Needs	Average for Location Decision Importance[a]
Very important	3.9
Fairly important	3.0
Not very important	2.6
Not important at all	2.0
	2.7

[a]Numbers refer to the five-point scale.

Average ratings varied by industry. While differences were not statistically significant overall, ratings were somewhat higher for certain industries which could be considered as being more likely to seek contact with the UW-Madison. This is shown in Table 4-6.

Table 4-6

UW-Madison Location Decision Importance by Industry

Industry	Average Importance[a]	Number of Firms
Medical	3.0	27
Business services	2.9	44
Transportation/communication	2.9	7
Technical services	2.8	15
Financial	2.8	28
Manufacturing	2.7	24
Retail	2.6	82
Agriculture	2.5	6
Miscellaneous services	2.5	35
Construction	2.2	25
Wholesale	2.0	12
	2.7	324

[a]Numbers refer to the five-point scale.

New firms that used UW-Madison facilities or services were more likely to rate the University higher with respect to their location decision, as indicated in Table 4-7.

Table 4-7

Use of UW-Madison Services and Location Decision Importance

Survey Question	Firm Used UW Service: Average Importance Rating	Firm Used UW Service: Number of Firms	Firm Used UW Service: Percent of Firms	Firm Did Not Use UW Service: Average Importance Rating	Firm Did Not Use UW Service: Number of Firms	Firm Did Not Use UW Service: Percent of Firms
Firm contacted UW-Madison professors, institutes, or departments for assistance or advice[a,b]	3.3	128	41%	2.2	181	59%
Firm sponsored or subsidized employee attendance at UW-Madison courses, workshops, conferences or seminars[a,b]	3.2	101	32%	2.4	208	68%
Firm used UW-Madison library facilities[a,b]	3.3	100	32%	2.3	204	68%
Firm used UW-Madison facilities for firm-related functions[b]	4.0	20	6%	2.6	288	94%
Firm used UW-Madison laboratories or other research facilities[b]	3.7	31	10%	2.6	280	90%
Firm contributed funds to UW-Madison for research[b]	3.9	25	8%	2.5	282	92%
Firm contributed funds to UW-Madison for non-research purposes[c]	4.0	6	2%	2.6	303	98%
Firm worked with University-Industry Research Program[c]	4.0	6	2%	2.6	303	98%

[a]Includes UW-Extension.

[b]Differences between average importance ratings statistically significant at the .001 level.

[c]Differences between average importance ratings statistically significant at the .05 level.

The data presented in Tables 4-1 through 4-7 would appear to indicate that the UW-Madison was a strong influence on firms' decisions to locate in Dane County. Depending on whether the statistics chosen are taken from Table 4-1 or Table 4-2, anywhere from 13% to 20% of new firms indicated the UW-Madison was a critical factor in their location decision. Using a broader conceptualization of the UW-Madison's role, based on the first three categories in Table 4-1, over half of all new firms considered the UW-Madison important.

Who are these firms? Firms that rated the UW-Madison highly on importance were those that located near the University, developed contacts with students, faculty, and administrators, and were more research-oriented. They also tended to use University facilities and services much more than firms which did not consider the University important in their decision. Size of the firm had no relationship to importance.

The UW-Madison and Interactions with New Business

The previous section demonstrated that a number of new firms located in Dane County because of the UW-Madison. Once established, these firms interacted in various ways with the University, and did so more frequently than firms indicating the University was not as important to their decision. This section considers the nature of these interactions.

Over 95% of all new firms felt the UW-Madison was important to Dane County's economy, as shown in Table 4-8.

Table 4-8

Importance of the UW-Madison to the Economy of Dane County

Very important.....	64%
Fairly important.....	31%
Not very important.....	3%
Not important at all.....	1%
Don't know.....	1%
	100%

About a third of the new firms thought the UW-Madison was important in helping them to meet their organization's labor force needs. Table 4-9 provides a breakdown.

Table 4-9

Importance of the UW-Madison in Helping Firms to Meet Their Labor Force Needs

Very important	15%
Fairly important	23%
Not very important	29%
Not important at all	30%
Don't know	3%
	100%

Forty-one percent of new firms contacted UW-Madison or UW-Extension professors, institutes, and departments for assistance or advice.[5] Departments contacted most frequently are listed in Table 4-10. The diversity of UW-Madison involvement with industry is indicated by the fact that over sixty different departments were contacted by at least one firm. Larger firms (more than 10 employees) were more likely to seek assistance than smaller firms.

Table 4-10

UW-Madison and UW-Extension Departments Contacted Most Frequently by New Firms

Department	Number of Contacts
School of Business[a]	56
Law School	10
Agriculture	10
College of Engineering	9
Computer Science	7

[a] Includes Management Institute and the Small Business Development Center.

[5] Statistics described in the text on this page and the next are taken from Table 4-7. The reader should note that no statistical tests could be performed using firm sizes or industry for the discussion which follows. The number of firms was too small when divided up by firm size or industry.

Thirty-two percent of new firms sponsored or subsidized employee attendance at UW-Madison or UW-Extension courses, conferences, seminars, or workshops. Larger firms (more than 10 employees) were more likely to sponsor attendance than smaller firms. Business services, technical services, and medical services were the industries with the greatest attendance relative to other industries. Thirty-two percent of new firms used UW-Madison library facilities. Libraries were used most heavily by technical services and medical services.

About ten percent of new firms used UW-Madison laboratories or other research facilities, a surprising finding. Eight percent contributed funds for UW-Madison research, and two percent for non-research purposes. Another surprise was the small number that had worked directly with the University - Industry Research Program - only two percent. On the other hand, UIR operates primarily as a facilitator to put firms in direct contact with departments. This service might not have been recognized.

Almost two-thirds of the new firms had customers or clients that were students or faculty members at the University, indicating that a majority of new businesses sold goods or services to the University community. Table 4-11 provides a breakdown.

Table 4-11

New Firms' Sales to the University Community

Percentage of Customers/Clients Who are UW Students or Faculty	Percentage of Respondents[a]
0%	38%
1-10%	35%
11-20%	11%
21-30%	7%
More than 30%	9%
	100%

[a]Figures represent all industries. Firms in retailing, miscellaneous services, and medical services were more likely to have customers or clients belonging to the University community than other industries.

About seventeen percent of new firms sold goods or services directly to the University itself. Details are presented in Table 4-12.

Table 4-12

New Business Sales to the UW-Madison

Percentage of New Firms' Total Sales Attributable to Purchases by the UW-Madison	Percentage of Respondents[a]
0%	83%
1-10%	13%
More than 10%	4%
	100%

[a]Figures represent all industries. Manufacturing and technical services were the industries most likely to sell to the University.

Twenty-nine percent of new firms employed one or more UW-Madison students. Further detail is presented in Table 4-13.

Table 4-13

New Business and Employment of UW-Madison Students

Percentage of Firms' Employees Attending the UW-Madison	Percentage of Respondents[a]
0%	38%
1-10%	35%
11-20%	11%
21-30%	7%
More than 30%	9%
	100%

[a]Figures represent all industries. Retailing and manufacturing were the industries most likely to employ students.

Forty-two percent of the new firms employed UW-Madison alumni. Table 4-14 provides more detail. Industries employing UW-Madison alumni were for the most part not the same as those employing students. In a surprising eleven percent of new firms, more than half of all employees were UW-Madison alumni. Of course, the reader is reminded that many of the firms surveyed were quite small.

Table 4-14

New Business and Employment of UW-Madison Alumni

Percentage of Firms' Employees Who are UW-Madison Alumni	Percentage of Respondents[a]
0%	58%
1-10%	9%
11-20%	4%
21-30%	6%
31-40%	5%
41-50%	7%
51-60%	2%
61-70%	1%
71-80%	2%
81-90%	1%
91-100%	5%
	100%

[a]Figures represent all industries. Manufacturing, financial services, business services, technical services, and medical services were the industries most likely to employ alumni

In addition to firm-initiated contacts with the University, we were also interested in learning the extent to which UW-Madison efforts to reach new businesses were successful. Table 4-15 describes the percentages of new firms contacted by the University via mail, phone, or personal visits.

Table 4-15

Percentage of Firms Contacted by the UW-Madison[a]

Type of UW-Madison Contact	Percentage of Firms Contacted by UW-Madison	Percentage of Firms Not Contacted by UW-Madison
Credit course offerings	54%	46%
Non-credit adult education opportunities	51%	49%
Business counseling	29%	71%
Technical/research services	15%	85%
Student internships	13%	87%
Placement of graduates	10%	90%
Testing services	6%	94%
Other student learning experiences	8%	92%

[a] Includes UW-Extension.

A final survey question asked new firms how many professional contacts they had with UW-Madison faculty and administrators; whether the contact was initiated by the firm or the University was not a concern. One-third had at least one contact. Firm size was not related to the number of contacts. The number of interactions ranged from one to thirty, with financial services, business services, and technical services as the industries most likely to have had contacts.

Concluding Remarks

Interactions between the University and new business firms appear to be pervasive. It seems apparent from the preceding data that there are a coterie of new firms which are linked to the UW-Madison through numerous mechanisms. Since new firms create new jobs, Dane County's economy experiences a boost in employment levels due to the University's presence. Estimating just how many is educated guesswork at best. If we assume 300 new firms in Dane County per year, that the University is an influence on 20%, and that the average new firm

employs 9 employees, then over 500 new jobs each year in the community are attributable to the University.[6] Of course, the University itself is responsible for over 40,000 jobs in Dane County, so the effect is small compared to the University's direct economic impact.[7]

Nonetheless, University-influenced firms contribute to the prosperity of the local economy in a number of ways. In the next chapter, we summarize our findings, and recommend how Madison can capitalize on the presence of the UW-Madison and MATC to attract new business.

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[6]The assumption of 300 new firms is based on DIHLR data. The average firm size comes from the survey findings. The 20% figure is based on the percentage of new firms who listed the University as one of the top five reasons for locating in Dane County.

[7]Rosen, M. I.; Strang, W. A.; Kramer, J. "The University of Wisconsin-Madison and the Local and State Economies: A Second Look." Bureau of Business Research, Graduate School of Business, University of Wisconsin-Madison. Monograph No. 20, March 1985.

CHAPTER 5

SUMMARY AND RECOMMENDATIONS

Businesses and educational institutions interact in a wide variety of manners that are complex and difficult to describe. Each has important need that the other serves. The current shift toward a knowledge or information-based society is increasing the importance of educational institutions to business. Conversely, dramatically increased fiscal pressures on public educational institutions have caused them to recognize the necessity for direct support from the business community. The need for an effective marriage has never been stronger.

Summary

The business and education communities in Dane County have considerable impact on each other. In terms of business location decisions, more than one-half (54%) of the new firms felt the University was an "important" factor in their decision to locate in Dane County; more than one-third (36%) found MATC "important" in the location decision. The UW was one of the five most important location factors for 19% of the new firms and MATC was in the top five for 5% of the new firms. The University's role is especially pronounced among research-oriented and business services firms. Clearly, the two educational institutions are already playing important roles in business development in Dane County. These roles are likely to grow in the future.

Interaction seems to build respect, or at least an appreciation, because firms that have involvements with MATC and the University value them more. Perhaps the most important economic development role of the University and MATC is to facilitate the successful operation of firms once they have decided to locate in Dane County. A summary of some key interactions between business and the two educational institutions follows in Table 5-1.

Table 5-1

Some Involvements Between Business Respondents, the UW-Madison, and MATC

	Percent of Firms Responding "Yes"	
	UW	MATC
Employees participate in education programs	32	20
Sought faculty/staff advice or counsel	41	28
Employ alumni	42	28
Employ current students	30	19
Make sales to the institution	17	7
Make sales to students and faculty	62	44

As indicated in Table 5-1, a sizable percentage of firms interact in one way or another with at least one of the institutions. The University, being considerably larger, has more interaction, but a very substantial number of businesses do involve themselves with MATC.

When one takes into account the fact that more than half of the respondent new businesses had 4 employees or less, the degree of involvement is particularly impressive. The involvement of larger firms with the institutions was considerably higher than that of small firms, suggesting that Table 5-1 understates the volume of involvement and likely economic impact.

Limitations of the Study

Even though a total of 324 local businesses returned usable responses, when the survey data was analyzed by industry the number of responses in each industry was too small to draw meaningful conclusions. As discussed in Chapter 2, different industries are likely to find different aspects of Madison attractive. So it was unfortunately not possible in this study to identify what elements of Dane County were attractive to each industry.

A second limitation is that data was collected in 1984. Since that time, MATC has become more visible as a result of its new campus, and the UW-Madison has attracted more high tech firms. It is therefore likely that the present importance of both institutions in location decisions is even higher than this study suggests.

Recommendations for Capitalizing on Madison's Educational Institutions

Economic development involves a host of individuals -- city, county, and state employees, real estate developers, industrial park developers, utility development personnel, bankers, landlords, and others. Educational institutions are sufficiently important that they should receive major attention from all of these individuals in the effort to retain existing businesses and attract new ones.

Development of an Educational Program Madison's two major educational institutions should develop and present an educational program to help all who are interested in economic development understand how to effectively use the resources available from the University and MATC. In order to become reasonably knowledgeable about the wide variety of educational opportunities, participants would have to invest a considerable amount of time in the program. The full program might, for example, call for 4-6 one-day sessions over a year's time. We would encourage the developers of such a program to make it professional, stimulating, and interactive rather than a simple "show and tell" parade.

Involvement of UW-Madison and MATC Officials The UW-Madison should be as responsive as possible to business development needs. For meaningful economic development opportunities, deans or key faculty in relevant colleges and departments (e.g. agriculture, business, engineering, medicine, chemistry) should be invited to participate in "the pitch" for a Dane County or Wisconsin location. MATC leaders should be able to clearly present the various program benefits that

it will be able to offer companies locating in the area. Although the time that these individuals would have for such activities would be limited, their involvement should prove to be productive.

Also, at the start of 1988, the UW-Madison will have a new Chancellor, Donna Shalala. We strongly encourage Chancellor Shalala to set a positive tone of cooperation with the local business community through her public statements and actions.

Small Business Center The Small Business Center in the UW-Madison School of Business is specifically set up to counsel small businesses, conduct research, issue publications, hold conferences, and offer credit and non-credit courses to potential small business owner/managers. In view of this study's finding that most new businesses are started by local entrepreneurs, it would seem particularly appropriate to publicize and promote the existence of this resource to assist individuals who are giving consideration to starting their own business.

Promotional Materials Professional promotional materials highlighting Dane County's educational excellence should be developed for use by all development agencies. Creative writers should improve on and fully develop such themes as:

"Madison-Where Minds Matter Most"

"The Educational Excellence of Dane County"

"Making Knowledge Work and Workers Knowledgeable"

Potential topics that could be included:

MATC
Hiring MATC Graduates
Hiring MATC Students
Internship/Apprenticeship Programs
Continuing Education Programs
Using the MATC Library
Testing Services Available
Special Educational Programs

UW-Madison
Hiring University Graduates
Hiring University Students
Part-Time Credit Education
Continuing Education Programs
Business Counseling Programs (SBDC)
Technical Counseling Programs
UIR
Statistics Laboratory
Productivity and Quality Center
Research Interaction Opportunities (UIR)
Using University Library Resources
Testing Services

Communication University and MATC program administrators need to continue to communicate regularly with the business community to ensure that the opportunities for interaction are known by all.

To conclude, those responsible for the economic development of Dane County and Madison need to recognize that its educational resources are a rare commodity, allowing the local economy to be nationally and internationally competitive. Business development certainly involves many factors besides education. Some of these can be managed (e.g. government/business relations), while others can only be dealt with once they have been recognized (e.g. climate and distance from markets). The education factor is clearly a strength and it is controllable. In recent years Madison has been using higher education as a promotable factor in far better fashion than most people realize, but the potential for improvement is great.

APPENDIX A

Economic Profile of Dane County, Wisconsin

ECONOMIC PROFILE
Dane County, Wisconsin

MAY, 1987

POPULATION

1986 Population	341,262	Percent of State	7.12%
1980 Population	323,545	Percent of State	6.87%
1970 Population	290,272	Percent of State	6.57%
1980-1986 Change	5.5%	State % Change	1.77%
1970-1980 Change	11.5%	State % Change	6.50%

1986 Persons/sq.mi	285.1	State average	87.6

1980 to 1986 Population Change: +17 717
Natural Increase: 15,824 Net Migration: 1,893

INCOME

Per Capita Income	1979	1984	Change
Dane County:	$ 8,074	$14,056	74.1%
Wisconsin:	$ 7,241	$12,378	70.9%
Household Income			
Dane County:	$21,288	$33,569	57.7%
Wisconsin:	$20,382	$32,107	57.5%

Source: U.S.Bureau of the Census

EMPLOYMENT: 2ND QUARTER, 1986

Industrial Groups:	Employees	$/Week	Employers
Total	188,724	$354	7,456
Ag.Ser.,Forestry & Mining	2,117	$315	129
Construction	7,413	$412	819
Manufacturing	22,047	$441	480
Food & Kindred Products	5,094	$503	51
Printing & Publishing	2,953	$393	119
Machinery (exc Electric)	2,787	$455	56
Transportation & Utilities	6,618	$459	261
Wholesale Trade	7,889	$432	527
Retail Trade	31,280	$174	1,754
Finance,Insurance,R.Estate	16,333	$355	719
Services (Private)	36,525	$295	2,563
Government	58,502	$426	204
Federal	3,152	$497	39
State	42,810	$410	71
Local	12,540	$463	94

1985 Labor Force: 193,500 1986 Labor Force: 202,900
Unemployment Rate: 4.0% Unemployment Rate: 4.2%
Source: Wisconsin DILHR

AGE COMPOSITION, 1980

Age Groups	Males Number	Males Percent Dane Co	Males Percent Wisc	Females Number	Females Percent Dane Co	Females Percent Wisc
Under 18	41,269	26%	30%	39,490	24%	28%
18 - 44	82,641	52%	41%	82,426	50%	39%
45 - 64	24,592	15%	19%	26,091	16%	19%
65 & Over	10,456	7%	10%	16,580	10%	14%
Total	138,958	100%	100%	164,587	100%	100%

Median Age: 27.4 years. Source: 1980 Census

DANE COUNTY LOCATION

DISTANCE TO:

Chicago	146 miles
Dubuque	95 miles
Milwaukee	77 miles
Twin Cities	258 miles

EMPLOYMENT BY PLACE OF WORK

Industry	1980	1986	% Change
Manufacturing	20,100	21,210	5.5
Construction	6,600	6,000	-9.0
Trans.,Com. & Util	6,300	6,450	2.4
Wholesale Trade	6,700	7,290	8.8
Retail Trade	29,100	33,950	16.7
Finance,Ins. & R.E	12,700	16,840	32.6
Services	31,100	39,850	28.3
Government	57,400	58,180	1.4
Federal	4,000	3,080	-23.0
State	39,200	41,230	5.2
Local	14,200	13,870	-2.3
Total Employment	170,000	189,770	11.6
Unemployment Rate	4.8%	4.4%	

Source: Wisconsin DILHR

Prepared and Published Annually by the Dane County Regional Planning Commission

AGRICULTURE

Number of farms in 1985: 3,170
Acres of land in farms: 620,000
Percent of land in farms: 78% State: 49%
Average farm size: 195.6 acres State: 213.3
Average cropland harvested per farm reporting
Dane County: 149 acres, State average: 133 acres

1985 Cash Receipts from Marketing ($1,000's)

Major Groups:	Dane Co.	% of State	State Total
Dairy Products	$111,180	3.7%	$3,022,827
Meat Animals	39,522	4.5%	886,125
Poultry & Eggs	3,625	2.5%	147,482
Field Crops	49,566	8.1%	612,210
All Vegetables	6,719	2.6%	259,578
Specialty Crops	2,239	1.6%	139,928
Other	1,073	2.5%	42,850
Total	$213,924	4.2%	$5,111,000

Source: WI Agriculture Reporting Service

RETAIL TRADE

Number of Establishments in 1982: 2,824
Sales ($1,000's) in 1982: $1,783,865
Percent of State Sales: 8.68%
Sales per capita in 1982: County: $5,390
State average: $4,368
Sales by Type of Business in 1982

	($1,000's)	Percent of State
Lumber, hardware, garden supply	64,732	6.33
General merchand.	208,102	8.64
Foods	317,819	7.10
Automotive	311,492	9.07
Gas Stations	170,182	8.06
Apparel	84,705	10.18
Furniture, house equipment	156,906	18.64
Eating & drinking places	206,156	9.51

Source: U.S. Census of Retail Trade

WHOLESALE TRADE

Number of Establishments (1982): 573
Sales ($1,000's) in 1982: $1,720,531
Percent of State: 6.3%

Source: U.S. Census of Wholesale Trade

CONSTRUCTION

Value Added by Construction (1,000's) '85-'86 Change

Type of Building	1985	1986	Amount	Percent
Residential*	125,296	185,216	59,920	48%
Nonresidential	92,425	107,201	14,776	16%
Total	$217,721	$292,417	$74,696	34%

*Includes houses, apartments and motels

Source: F.W. Dodge, Division of McGraw-Hill Information Systems Company

SERVICE INDUSTRIES

Number of Establishments (1982): 1,991
Total receipts ($1,000's) in 1982: $665,726
Percent of State: 11.18%
Business services:
No. of establishments (1982): 397
Receipts ($1,000's) in 1982: $176,728
Percent of State: 16.42%
Health services, except hospitals:
No. of establishments (1982): 442
Receipts ($1,000's) in 1982: $163,196
Percent of State: 8.25%

Source: U.S. Census of Service Industries

WAGE & SALARY RATES IN SELECTED OCCUPATIONS

DANE COUNTY, MADISON SMSA

	Current Wage Rates	
Hourly Rates	Median	$ Range
Accountant	$10.09	$ 7-16
Admin. Assistant	$10.03	$ 7-16
Assembler, Class A	$9.61	$ 8-10
Assembler, Class C	$7.65	$ 7- 8
Bookkeeper	$7.17	$ 6-10
Clerk-Typist	$6.15	$ 4- 8
Clerk-General	$6.85	$ 4-10
Programmer II	$13.07	$10-16
Drafter, Civil	$8.53	$ 8-12
Engineer		
Mechanical	$15.92	$12-18
Structural	$13.88	$10-16
Technician	$10.57	$ 8-14
Electrical	$16.34	$16-20
File Clerk	$4.50	$ 3- 6
Key Punch Operator	$5.36	$ 4- 8
Machine Operator	$10.20	$ 8-12
Maint. Mechanic	$9.70	$ 7-12
Manager, Office	$11.24	$ 6-18
Material Handler	$6.25	$ 4-10
Shipper	$6.90	$ 4-12
Stenographer	$9.63	$ 8-10
Truck Driver, Heavy	$8.15	$ 6-14
Truck Driver, Light	$6.04	$ 4-12
Welder, Combination	$8.58	$ 7-12

Source: WI Dept Industry, Labor & Human Relations, 1986 Wage Survey-Dane County Service Delivery Area

HOUSING

Housing Units Authorized by Building Permits

Year	No. Housing Units	Annual Increase
1980	1,829	1.4%
1981	1,706	1.3%
1982	999	0.8%
1983	2,215	1.7%
1984	2,165	1.6%
1985	2,459	1.8%
1986	2,491	1.8%

Median housing value (1984): $75,700
Median contract rent (1984): $325
No. owner-occupied housing units: 69,454 52%
No. renter-occupied housing units: 58,397 44%
Number of vacant housing units: 5,394 4%
Source: Census Bureau and Dane County RPC

POPULATION OF INCORPORATED PLACES

	1980	1986	#Change	%Change
Belleville (V)	1,302	1,460	158	12.1%
Black Earth (V)	1,145	1,217	72	6.3%
Blue Mounds (V)	387	422	35	9.0%
Brooklyn (V)	627	698	71	11.3%
Cambridge (V)	844	857	13	1.5%
Cottage Grove (V)	888	1,053	165	18.6%
Cross Plains (V)	2,156	2,338	182	8.4%
Dane (V)	518	596	78	15.1%
Deerfield (V)	1,466	1,584	118	8.0%
DeForest (V)	3,367	4,318	951	28.2%
Maple Bluff (V)	1,351	1,318	-33	-2.4%
Marshall (V)	2,363	2,610	247	10.4%
Mazomanie (V)	1,248	1,324	76	6.1%
McFarland (V)	3,783	4,354	571	15.1%
Mount Horeb (V)	3,251	3,826	575	17.7%
Oregon (V)	3,876	4,347	471	12.2%
Rockdale (V)	200	200	0	-
Shorewood Hills (V)	1,837	1,832	-5	-0.3%
Waunakee (V)	3,866	4,752	886	22.9%
Fitchburg (C)	11,973	13,905	1932	16.1%
Madison (C)	170,616	175,664	5048	3.0%
Middleton (C)	11,779	13,108	1260	10.6%
Monona (C)	8,809	8,712	-97	-1.1%
Stoughton (C)	7,589	8,456	867	11.4%
Sun Prairie (C)	12,931	14,008	1077	8.3%
Verona (C)	3,336	3,823	487	14.6%

Source: U.S. Census Bureau & Wisconsin DOA

GOVERNMENT FINANCE

Property Taxes Levied (1985)

Total ($1,000's)	$261,742
Percent to School Districts:	56.3%
Percent to VocTech District:	5.0%
Percent to Dane County:	14.4%
Percent to Local government:	22.1%
Percent to others:	2.2%
Per Capita:	$772
Full Value Rate (effective):	.02340

Property Assessment - Full Value (1985)

Total ($ millions):	$9,581
Per Capita:	$28,247
Property in TIF ($ millions):	$135.8

State Shared Revenue ($1,000's)	$5,232

State Aids to County Government (1985):

Education ($1,000's):	$26
Natural Resources:	$402
Transportation:	$2,745
Health & Social Services:	$25,657
Public Safety:	$253
Other:	$6

Source: Wisconsin Department of Revenue

State Equalization Aid, School Aid Credits & TIF Aid to 16 School Districts in Dane County 1985-1986, ($1,000's): $51,060

Source: Wisconsin Dept. of Public Instruction

OUTDOOR RECREATION HIGHLIGHTS

Total area of County:	789,100 acres
Area of named lakes:	21,366 acres
Total number of lakes:	35
Lakes with public access:	25

Public land designated for recreation use:

Total:	26,848 acres
State:	16,347 acres
County:	3,288 acres
Local:	7,213 acres

Water related recreation - areas - facilities:

Canoe trails:	18 miles
Swimming:	37 areas, 92 miles of shoreland
Fishing:	Type of fish caught - panfish walleye, bass, northern, trout
Boating:	40 launching sites

Land related recreation - areas - facilities:

Golfing:	1 - 36 hole, 9 - 18 hole, 5 - 9 hole
Camping:	(developed & primitive) 681 sites
Major hiking trails:	46 miles
Bicycling trails/routes:	144 miles
Snowmobile trails open to public use:	12 miles
Downhill skiing:	one area, six runs
Cross county skiing:	14 areas, 100+ miles
Hunting:	8,548 acres

Of special interest:

(Urban) State Capitol, State Historical Museum, Vilas Zoo, Civic Center, and the UW Campus & Arboretum

(Rural) Blue Mounds State Park, Little Norway, Cave of the Mounds, State Fish Hatchery, Military Ridge State Park Trail

LARGEST EMPLOYERS

Twelve Largest Employers

Name of Employer	Location	Type of Business	Employment
State of Wisconsin	Madison	Government	25,900
University of Wisconsin	Madison	Education & Health Care	16,800
Madison Metro Schools	Madison	Education	3,550
Meriter Hospital	Madison	Health Care	2,650
Oscar Mayer & Co., Inc.	Madison	Manufacturing	2,400
City of Madison	Madison	Government	2,400
Wisc. Physicians Service	Monona	Insurance	2,200
American Family Insurance	Madison	Insurance	1,950
Federal Government	Madison	Government (excluding Post Offices)	1,850
County of Dane	Madison	Government	1,750
Madison Area Tech. College	Madison	Education	1,650
CUNA / CUMIS	Madison	Insurance	1,450

MANUFACTURING

Ten Largest Manufacturers

Name of Company	Location	Product or Business	Employment
Oscar Mayer & Co., Inc.	Madison	Meat packing	2,400
Graber Industries, Inc.	Middleton	Drapery hardware	1,100
Ohmeda, Div. of Airco	Madison	Medical equipment/supplies	950
Nicolet Instrument Corp.	Fitchburg	Electronic computing equip.	750
Ray-O-Vac Corporation	Madison	Batteries	750
Webcrafters, Inc.	Madison	Printing	550
Carnes, Div. of Wehr	Verona	Sheet Metal Products	500
Madison-Kipp Corp.	Madison	Diecastings, lubricators	600
Stoughton Trailers	Stoughton	Semi-trailers	400
Heublein, Inc.	Stoughton	Food products	400

Number of Establishments by Employment Size, March 1986

Industrial Group	Under 20	20-49	50-99	100-249	250& Over	Total
Foods, beverages	25	10	8	4	3	50
Wood products & furniture	42	4	3	2	1	52
Measuring, analyzing & controlling instruments	13	1	1	0	2	17
Chemical, petroleum, rubber & plastics	29	14	7	8	0	58
Metalworking, machinery, & transport equipment	84	23	9	12	5	133
Printing & publishing	89	21	7	3	2	122
All others	40	6	3	2	0	51

Second Quarter, 1986	
Number of Establishments:	480
Employees (1,000's):	22.0
Percent of State:	4.22%
Total payroll ($ millions):	123.6
Percent of State:	3.98%
Average earnings/week:	
Production workers:	$440.89
State average:	$464.29

Small Communities Largest Manufacturers

Name	Location	Product or Business
Marshall Erdman & Assoc.	Waunakee	Building Construction
Wisconsin Porcelain Co.	Sun Prairie	Electrical parts
EVCO Plastics Div.	DeForest	Plastics
Janlin Plastics	Mt. Horeb	Plastics
Wick Building Systems	Mazomanie	Ag. Bldgs & Homes
Wisco Industries, Inc.	Oregon	Service Industry Machine
Amteico	McFarland	Communication Equipment
Plastic Ingenuity, Inc.	Cross Plains	Plastics
Wisconsin Fineblanking	Deerfield	Metal stampings

Source: Wisconsin Department of Industry, Labor & Human Relations

Although not generally characterized as an industrial center, Dane County with about 22,000 industrial jobs now ranks sixth among Wisconsin counties in manufacturing. There has been a steady increase in these jobs in recent years. The county is strong in foods and printing and, to a lesser degree in fabricated metal products, machinery, electrical equipment and measuring control instruments.

DANE COUNTY

A DESCRIPTION

Dane County has a number of attributes that combine to create a quality of life unsurpassed in most of the nation's urban areas. Among the ingredients that contribute to this high standing are its urban and rural diversity, an abundance of community resources, its environmental quality and its location.

MADISON

Madison, the state capital and home of the state's largest university, includes over half of the county population. The city is well known for its attractiveness and is routinely cited as one of the nation's most livable cities. From all directions the Capitol dome dominates the skyline, alluding to the historic importance of government to the city's prosperity. While this public focus is indisputable, Madison has also attracted a variety of businesses, ranging from American Family Insurance to Oscar Mayer and Co., to Ray-O-Vac Corporation. Lying between Lakes Mendota and Monona, the downtown has recently been redeveloped to create the Capitol Concourse and State Street Mall. State Street Mall, lined with small shops and restaurants, is the pedestrian connection to the University of Wisconsin-Madison. The university is known world wide for its academic excellence and its research facilities. Close ties exist between the university, the community and the state government. Madison is also the cultural center of the area, with the recently opened Civic Center and university events.

ENVIRONMENT

Covering about 1,200 square miles, Dane County contains a pleasing variety of natural and scenic resources. The eastern portion is gently rolling land with rich soils. It is dotted with glacial lakes, wetlands and drumlins, elliptical hills that stand out sharply against the surrounding fields. Western Dane County has more rugged topography, greater concentrations of woodlands, steep slopes, narrow stream and river valleys. Diversity applies not only to physical features but also to a wide variety of plant and animal life. These physical features provide visual relief as well as a wide range of recreational activities.

Dane County has a rich heritage of agricultural productivity. The county has the state's largest share of prime agicultural land. It usually ranks first among Wisconsin counties in farm income and dollar sales are among the nation's highest. Dairy products are the single most important source of farm income. In addition, cash crops, swine and beef cattle are also important.

SMALL COMMUNITIES

In contrast to Madison, Dane County's small communities offer a rural lifestyle. Founded principally as agricultural service centers, these communities have evolved to become small industrial centers and homes to commuters to Madison. Each of the small cities and villages has unique qualities generated by heritage, environment and location. However, they all share a pride in their community and a desire to retain their community identity. Common community activities range from promoting industrial development to local theater groups and downtown revitalization to community festivals.

TRANSPORTATION

Dane County has an excellent transportation system both within the county and connecting it to major markets. Interstates 90 & 94 intersect at Madison providing easy access to Minneapolis-St. Paul, Milwaukee, and Chicago. Five U.S. highways serve as intracounty connectors as well as linkages to other Wisconsin cities. State highways and county trunk highways provide intercommunity service and connect to the major highways. The Dane County Regional Airport, located on Madison's east side, offers passenger service and freight service via seven scheduled airlines

— Republic, Northwest Orient, United, Ozark, Frontier, Air Wisconsin, Midstate, Midwest Express and American Eagle, carrying over 800,000 passengers a year. Freight service is provided by three railroads, the Chicago and Northwestern, the Soo Line and a short line operator. In addition, 30 common carrier truck lines serve the county's communities. For commuters, Madison Metro provides convenient efficient bus service in Madison and nearby communities. Other commuter services serve outlying areas during rush hours. There is also a well organized car and vanpooling program.

EDUCATION RESOURCES

Dane County has exceptional public and parochial school systems, many with top national ranking. Post secondary education is available from the University of Wisconsin-Madison, Edgewood College, Madison Area Technical College and Madison Business College. The UW also serves the county and the state through Extension, research and public service.

Students at the UW-Madison campus in September, 1986 totalled 44,584, and were enrolled in ten major colleges, schools and divisions. The University of Wisconsin ranks second in the nation in the number of graduate degrees granted annually.

The UW-Management Institute provides management training programs for business and industry. These programs for top management are designed to provide analysis, and some solutions to major industrial and business problems.

Through the University-Industry Research Program, Wisconsin firms are provided convenient access to diversified scientific, engineering and management resources. Established by the faculty to facilitate cooperation with industry, the program draws upon the vast information and special competences uniquely available at an educational and research center. An activity of the graduate school, UIR selects its staff members in industrial areas and is able to draw upon the total resources of the university.

The Madison Area Technical College, one of the finest in the country, offers instruction to more than 47,000 persons (38,000 in Dane County) over the age of 18. The school, covering a four-county area, offers trade apprentice extension, and college transfer courses. They also grant two-year associate degrees in liberal studies.

For additional county and/or specific community data contact:

Dane County Regional Planning Commission
Room 523, City-County Building
Madison, Wisconsin 53709
(608) 266-4137

APPENDIX B

Survey Instruments

APPENDIX B

Greater Madison Chamber of Commerce

615 EAST WASHINGTON AVENUE · P.O. BOX 71 · 608 256-8348
MADISON, WISCONSIN 53701-0071

Dear Madison/Dane County Business Executive:

Our economic future is dependent on the success of businesses new to our local economy, such as yours. We want to be sure that City and County government provide an environment conducive to your success and growth. To this end, we encourage you to cooperate with the enclosed University of Wisconsin/Madison Area Technical College survey.

The results of the survey will be public and will be available to City and County government as we work to help you and the new businesses of tomorrow grow and prosper. Understanding your motives and needs is important to local government as well as to UW/MATC, which both represent important economic assets to our economy.

Thank you for your cooperation.

Sincerely,

Robert W. Brennan, President
Greater Madison Chamber of Commerce

F. Joseph Sensenbrenner
Mayor, City of Madison

Jonathan Barry
Dane County Executive

clk
Enclosure

University of Wisconsin Madison

Graduate School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

Bureau of Business Research

August 1984

Dear Madison/Dane County Business Executive:

As part of a joint research effort conducted by the University of Wisconsin-Madison and Madison Area Technical College, your firm is being asked to participate in an important study which potentially has major implications for understanding and improving the economy of Dane County. Based on information obtained In Business magazine, your firm has been selected because records show it has begun operations in Dane County or moved here within the last three years. We are interested in learning why your firm chose Dane County.

Please take the next fifteen minutes to complete the enclosed questionnaire. The responses your firm provides are important and will be completely confidential. The survey should only be completed by the individual in your firm who was most directly involved in the initial decision to locate in Dane County. If you are not that person, please pass it on to the appropriate individual.

The results of this study will help to pinpoint what local factors are most attractive to potential firms so that concrete efforts can be made to improve Dane County's economic base. In addition, the information obtained will help to strengthen relations between the business community and those local institutions that are important to Dane County's economic development. You may obtain a copy of the final report when it is published by writing "copy of results requested" on the back of the return envelope and typing or printing legibly your name and your firm's name and address below it.

Even though this questionnaire is intended for a variety of businesses, it has been designed in such a way that every question should be relevant to your firm. Please respond to the best of your ability. If you should have any questions regarding this questionnaire, please call the Bureau of Business Research at 262-1550. A business reply envelope is enclosed for your convenience.

Thank you for your valued participation.

Sincerely,

William A. Strang

William A. Strang
Associate Dean for External Relations
Director, Bureau of Business Research

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WAS:jgk
Enclosure

SURVEY OF NEW AND RELOCATED BUSINESSES IN DANE COUNTY

TION 1: GENERAL INFORMATION

Instructions: In this section you will be asked a series of questions about your firm's initial decision to locate in Dane County. Please answer as best you can. All questions should be answered only with reference to this location or unit of your firm, even if it has other sites. Your responses will be completely confidential.

1.1 Which single category best describes your position in this firm?

___ Chief Executive Officer
___ President
___ Vice-President
___ Owner (if privately held)
___ General Manager
___ Other (please specify): _____

2 When did this firm begin operations in Dane County? Month: _____, 19__

PORTANT: If this firm began operations in Dane County prior to 1980, your answers o the remainder of the questions are not needed since the purpose of this study is to arn about new business. However, please return the questionnaire so that the sponse rate can be accurately calculated.

1.3 Did this firm relocate to Dane County from elsewhere, or was this firm started in Dane County?

___ Relocated from elsewhere (Go to 1.3.1)
___ Started in Dane County (Go to 1.4)

1.3.1 Where did this firm relocate from? City: _____ State: ____

1.3.2 What were the primary reasons why this firm left its previous location?

1) _____
2) _____

1.3.3 Approximately what percentage of the employees now in this firm relocated from the previous location? _____%

1.3.4 For approximately how many years was this firm at its previous location? _____ years

1.4 Which of the following outside sources were contacted for information used in making the location decision? (Check all that apply)

___ No outside sources were used
___ U.S. Department of Commerce
___ Wisconsin Department of Development
___ Other state agencies
___ Greater Madison Chamber of Commerce
___ Other local agencies
___ Madison Area Technical College (MATC)
___ University of Wisconsin-Madison
___ Outside consultants
___ Other firms
___ Other (please specify): _____

1.5 Please provide the job titles of those members of the firm who were most involved in the location decision:

1) _____ 2) _____ 3) _____

CONTINUED ON NEXT PAGE

1.6 Approximately how many other potential locations outside of Dane County were considered?

_____ None (Go to 1.7) _____ Locations (Go to 1.6.1)

1.6.1 How many of these were in Wisconsin? _____ None _____ Locations

1.7 Which single category best describes this firm at this location?

___ Entire company
___ Corporate headquarters
___ Manufacturing plant
___ Retail outlet
___ Warehouse/wholesale
___ Major office
___ Branch office
___ Other (please specify): _____

1.8 Approximately how many employees does this firm have at this location?

_____ Number of full-time hourly employees
_____ Number of part-time hourly employees
_____ Number of salaried employees
_____ Other

1.9 Approximately what percentage of this firm's total costs are labor costs? (Include salaries, wages, fringes, social security, unemployment insurance, and workman's compensation as labor costs in your estimate.) _____%

1.10 Approximately what percentage of this firm's budget is spent on research and development? _____%

1.11 By May 1, 1986, if the current economic climate improves, does this firm plan to:

___ Expand employment in Dane County (by _____%)
___ Keep employment about the same
___ Reduce employment in Dane County (by _____%)

1.12 By May 1, 1986, if the current economic climate remains as it is, does this firm plan to:

___ Expand employment in Dane County (by _____%)
___ Keep employment about the same
___ Reduce employment in Dane County (by _____%)

1.13 By May 1, 1986, if the current economic climate worsens, does this firm plan to:

___ Expand employment in Dane County (by _____%)
___ Keep employment about the same
___ Reduce employment in Dane County (by _____%)

1.14 What is this firm's zip code? _____

CONTINUED ON NEXT PAGE

SECTION 2: REASONS FOR FIRM'S DECISION TO LOCATE IN DANE COUNTY

Instructions: Please use the scale illustrated below to evaluate the importance of each of the following reasons in this firm's decision to locate in Dane County. Circle only one number for each reason.

IMPORTANCE SCALE

5	4	3	2	1
CRITICALLY IMPORTANT (If this factor unfavorable or lacking, firm would not have located in Dane County)	VERY IMPORTANT	IMPORTANT	NOT VERY IMPORTANT	NOT IMPORTANT AT ALL (This factor was not considered in the decision to locate in Dane County)

2.1	Availability of necessary labor skills.....	5	4	3	2	1
2.2	Wage rates.....	5	4	3	2	1
2.3	General quality and productivity of the labor force (Includes attitudes toward work, attendance, turnover, etc.).....	5	4	3	2	1
2.4	Employer costs of contribution to workmen's compensation.....	5	4	3	2	1
2.5	Employer costs of contribution to unemployment insurance.....	5	4	3	2	1
2.6	Availability of funds for employment and training programs.....	5	4	3	2	1
2.7	Union climate.....	5	4	3	2	1
2.8	Access to major highway interchanges.....	5	4	3	2	1
2.9	Overall quality of trucking, railroad, air freight (includes rates, availability, reliability, schedules, etc.).....	5	4	3	2	1
2.10	Air passenger service.....	5	4	3	2	1
2.11	Personal ties to Dane County/Wisconsin.....	5	4	3	2	1
2.12	General preference for Wisconsin/Midwest.....	5	4	3	2	1
2.13	Population size.....	5	4	3	2	1
2.14	Scenic beauty.....	5	4	3	2	1
2.15	Climate.....	5	4	3	2	1
2.16	Cost-of-living.....	5	4	3	2	1
2.17	Crime rate.....	5	4	3	2	1
2.18	Recreational and cultural opportunities.....	5	4	3	2	1
2.19	Housing (selection, availability, cost).....	5	4	3	2	1

CONTINUED ON NEXT PAGE

2.20	Medical services	5	4	3	2	1
2.21	Personal taxes (income and property)	5	4	3	2	1
2.22	Quality of primary and secondary schools	5	4	3	2	1
2.23	Other government services (public transport, police, fire, etc.)	5	4	3	2	1
2.24	Presence of State of Wisconsin offices	5	4	3	2	1
2.25	Presence of Madison Area Technical College	5	4	3	2	1
2.26	Presence of University of Wisconsin-Madison	5	4	3	2	1
2.27	Business taxes	5	4	3	2	1
2.28	Availability of financing or government financial incentives (industrial bonds, TIF, etc.)	5	4	3	2	1
2.29	Cost and availability of business real estate	5	4	3	2	1
2.30	Zoning	5	4	3	2	1
2.31	Construction costs	5	4	3	2	1
2.32	Site selection assistance from local government agencies	5	4	3	2	1
2.33	Utility and energy costs (natural gas, oil electric, etc.)	5	4	3	2	1
2.34	Business regulations	5	4	3	2	1
2.35	Costs of raw materials	5	4	3	2	1
2.36	Proximity to major suppliers	5	4	3	2	1
2.37	Close proximity to markets (distributors or customers)	5	4	3	2	1
2.38	Opportunity to enter new market or serve an extended market	5	4	3	2	1
2.39	Competitive opportunity in local markets	5	4	3	2	1
2.40	Success of already established firms	5	4	3	2	1
2.41	Proximity to other facilities or headquarters of this firm	5	4	3	2	1
2.42	Other (please specify): _____	5	4	3	2	1
	_____	5	4	3	2	1

From the list above, please circle the five reasons which were the most critical to this firm's decision to locate in Dane County. Then list the reasons in order starting with the single most important reason and continuing through the fifth.

1) _____

2) _____

3) _____

4) _____

5) _____

CONTINUED ON NEXT PAGE

SECTION 3: RELATIONSHIPS BETWEEN INDUSTRY AND EDUCATIONAL INSTITUTIONS

Instructions: In the past few years there has been an increase of interest in improving relationships between industry and educational institutions. The following questions refer to your firm's past or present interaction with MATC and either the University of Wisconsin-Madison or UW-Extension. Please do not alter any of your answers to the previous sections based on your responses to this section.

3.1 How important do you think the UW-Madison and UW-Extension are to the economy of Dane County? (Circle one)

Very Important	Fairly Important	Not Very Important	Not Important At All	Don't Know

3.2 How important do you think the UW-Madison and UW-Extension are in helping to meet your firm's labor force needs? (Circle one)

Very Important	Fairly Important	Not Very Important	Not Important At All	Don't Know

3.3 How important do you think Madison Area Technical College (MATC) is to the economy of Dane County? (Circle one)

Very Important	Fairly Important	Not Very Important	Not Important At All	Don't Know

3.4 How important do you think MATC is in helping to meet your firm's labor force needs? (Circle one)

Very Important	Fairly Important	Not Very Important	Not Important At All	Don't Know

	Yes	No	Don't Know
3.5 Has your firm ever contacted UW-Madison or UW-Extension professors, institutes, or departments for assistance or advice?.....	_____	_____	_____

If yes, what departments or institutes?

1) _____ 2) _____

3.6 Has your firm ever sponsored or subsidized employee attendance at UW-Madison or UW-Extension courses, conferences, seminars, or workshops?.....	_____	_____	_____
3.7 Has your firm ever used UW-Madison library facilities?.....	_____	_____	_____

If yes, which libraries?

1) _____ 2) _____

3.8 Has your firm ever used UW-Madison or UW-Extension meeting or conference facilities for firm-related functions?.....	_____	_____	_____

CONTINUED ON NEXT PAGE

		Yes	No	Don't Know
3.9	Has your firm ever used UW-Madison laboratories or other research facilities?.....	____	____	____
3.10	Has your firm ever contributed funds to support UW-Madison research?.....	____	____	____
3.11	Has your firm ever contributed funds to the UW-Madison or UW-Extension for purposes other than research?.....	____	____	____
3.12	Has your firm ever worked directly with the University-Industry Research Program?.....	____	____	____
3.13	Has your firm ever contacted MATC instructors or departments for assistance or advice?.....	____	____	____

If yes, what departments?

1) _____ 2) _____

3.14	Has your firm ever sponsored or subsidized employee attendance at MATC courses, conferences, seminars or workshops?.....	____	____	____
3.15	Has your firm ever used MATC library facilities?.....	____	____	____
3.16	Has your firm ever used MATC technical facilities?.....	____	____	____
3.17	Has your firm ever used other MATC facilities for firm-related functions?.....	____	____	____
3.18	Has your firm ever contributed funds to MATC?.	____	____	____

3.19 Approximately what percentage of your customers or clients are students or faculty at the UW-Madison or UW-Extension? ____%

3.20 Approximately what percentage of your sales in 1983 came from purchases authorized by the UW-Madison or UW-Extension? ____%

3.21 Approximately what percentage of your employees:

Currently attend the UW-Madison? ____%

Are graduates of the UW-Madison? ____%

3.22 Approximately what percentage of your customers or clients are students or faculty at MATC? ____%

3.23 Approximately what percentage of your sales in 1983 came from purchases authorized by MATC? ____%

3.24 Approximately what percentage of your employees:

Currently attend MATC? ____%

Are graduates of MATC? ____%

CONTINUED ON NEXT PAGE

Has the UW-Madison, UW-Extension or MATC ever contacted your firm regarding:

(Contacts include mailings, telephone conversations, or personal visits. Check all that apply.)

		Contacted by UW-Madison	Contacted by UW-Extension	Contacted by MATC	Don't Know
3.25	Credit course offerings.....	____	____	____	____
3.26	Non-credit adult education opportunities.....	____	____	____	____
3.27	Technical/research services.....	____	____	____	____
3.28	Testing services.....	____	____	____	____
3.29	Business counseling.....	____	____	____	____
3.30	Placement of graduates.....	____	____	____	____
3.31	Student internships.....	____	____	____	____
3.32	Other student learning experiences..	____	____	____	____
3.33	Other (please specify type of contact and institution):				
	_____	____	____	____	
	_____	____	____	____	

3.34 Excluding clients, approximately how many UW-Madison, UW-Extension, and MATC faculty/administrators did your firm have professional contact with in 1983?

_____ UW-Madison faculty/administrators

_____ UW-Extension faculty/administrators

_____ MATC faculty/administrators

Please use the space below for any additional comments. We are especially interested in learning what you feel are the specific advantages and/or disadvantages of operating in Dane County.

ERIC Clearinghouse for Junior Colleges DEC 22 1988

THANK YOU FOR YOUR PARTICIPATION!

STANDARD INDUSTRIAL CLASSIFICATION _____
(For research purposes only)